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ROLE OF THE MEDICAL SCHOOL IN INDUSTRIAL AMERICA

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The word "medicine," to use it in its broadest sense, represents an area of human endeavor that has ramifications extending into all phases of the structure and function of our society. In fact, medicine is a function of society. I can think of no art or science, no human interest or enterprise, that does not take from, add to, or depend on medicine in one way or another. The increasing effectiveness of medicine and the fact that continued research and the proper education of medical personnel will increase this effectiveness justifies the implications of this statement; but I think that people are taking medicine's effectiveness for granted and that they fail to appreciate the magnitude and the complexity of the educational enterprise that is essential to this effectiveness. It is the magnitude and the complexity of this educational enterprise that I shall discuss. In giving you an understanding of this, I first want to point up the breadth and depth of medicine as a body of knowledge. It must be remembered that medical science is a composite of many sciences. The figure shows the whole of medicine as a pie with each of its component sciences as a separate segment. The whole of medicine is greater than the sum of its parts. This is because while scientific facts and technical gadgets play an important role in medicine's effectiveness, it still takes a person to apply the fact and use the gadget in the solution of another person's problem.

No two persons are alike or respond alike to the same situation. A piece of scientific information or a technical procedure, therefore, represents the only fixed quantity in an equation in which the human patient and the human physician are both variable considerations. In the last analysis the ultimate situation in medical care is one in which two persons are working together on the basis of a close interpersonal relationship. This relationship is the atmosphere in which scientific and technical medical knowledge is applied. The development, control, and constructive use of this relationship by the physician is known as the art of medicine. While definite skills and tools, applicable to the field of interpersonal relationships, are coming to be recognized and taught as such, it must be realized that in the effective practice of the art of medicine, the physician's own personality and his emotional and spiritual make-up will always be of great importance.

Capacity in the art of medicine as I have described the art and those factors in effective service that depend on a motivation to serve humanity and on the physician's own personality and emotional and spiritual make-up cannot be represented as pieces of pie. It is these components that give depth to medicine as a body of knowledge. If these components of medicine are to be given diagrammatic representation, they might best be indicated as the crucible—the platter, a priori the physician as the proper kind of person who must develop the knowledge and skills—that the segments of the pie represent. If this is true, the importance of selecting the right kind of men and women for the study of medicine should be self-evident. It is my feeling that the rapid scientific development of the past years has so taken the limelight that medical educators have tended to lose sight of the importance of providing the students with an experience in the art of medicine. Medical educators have been preoccupied with the diseases of people and the treatment of these diseases and have neglected the people with disease and the treatment of these people.

I am directing this paper principally to business and industrial leaders—men who of necessity must think in terms of capital investment, operating expense, profits and losses, and organizational efficiency. In speaking to these leaders, I am aware that I am also speaking to men who realize that if business and industry are to be efficient, they must be concerned not only with the efficiency of their machines and organizations but also with the efficiency of the men and women who run these machines and organizations. Be all of this as it may, since medical educators until recently have been remiss in keeping humanistic values in medical education in proper focus, I want to take this opportunity to point out that as business and industry develop an interest in medical education, I hope that this will continue to be a general interest as well as one that is concerned with the education of men and women who may be attracted to the practice of industrial medicine as a specialty. In fact, a little later I think I can point out that the future of medicine's effec-

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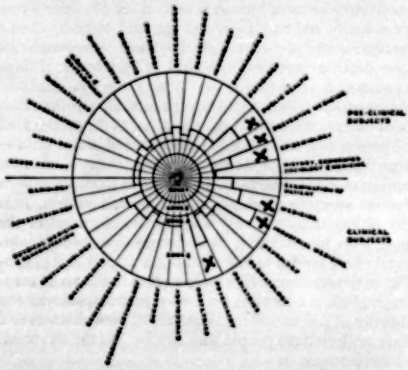
Read at the Conference on the Modern Corporation and the Nation's Health, sponsored by National Fund for Medical Education, Chicago, Feb. 8, 1955.

tiveness is such that the industrial physician, as much as or more than any other, must have capacity and ability in the humanistic as well as the scientific aspects of medicine.

Now to get back to my pie that I may have been letting get a little cold. If it is divided into two hemispheres, the upper one is limited to those sciences, such as anatomy and physiology, that are basic to the more practical, the clinical, sciences. These practical, or clinical, sciences, such as medicine and surgery, are grouped in the lower hemisphere.

ADJUSTMENTS IN MEDICAL EDUCATION

So much for a brief consideration of the breadth and depth of medicine as a body of knowledge. No one person can master such a vast amount of knowledge. How can one dig into it, carry away but a portion, and still have enough to make him or her a useful and an effective physician? If something is to be pulled out of such an array of subject matter, it is essential that the faculty and other resources of the medical school be such that all of this is



Content of medicine as an area of knowledge as it must be approached by the four levels of medical education. Zone 1, undergraduate education. Zone 2, intern training. Zone 3, graduate (residency or specialty training). Zone 4, postgraduate education (continuation education).

put together in such a way that the student can appreciate medicine as an integrated and unified body of knowledge —as a carefully constructed building and not as unrelated piles of bricks and boards. In order to do this, many adjustments are necessary. I can only discuss those adjustments that are necessitated by the fact that the knowledge important to medicine is expanding very rapidly. The adjustments to this have been three: (1) the packing of more and more information into the medical school curriculum, (2) the lengthening of the curriculum, and (3) the development of specialism.

The first adjustment, the packing—the tamping—of more and more content into the curriculum needs no discussion. Suffice it to say that it is done and done close to the limit of human tolerance. Ask any medical student. In discussing the second adjustment, the lengthening of the curriculum, let me remind you that a general education is essential before a student even begins the formal study of medicine—eight years of grade school, four years of high shool, and three to four years of liberal arts college work. Most students applying to medical school began to point to medicine as freshmen in college, so that beginning with a minimum of three years of college work, four years of medical school, one year of internship and two to five years of graduate work (education for the practice of one of the specialties), we must realize that the formal education for the practice of medicine involves from 10 to 13 years.

This lengthening is best visualized in the figure. From this figure I will lead into a discussion of the third way in which medical education has adjusted to the growing body of medical knowledge, the development of specialism. The entire pie represents the whole of medical knowledge and the pieces its most important components. As I have said before, this body of knowledge is such that no one person can know all there is to know. How do we cope with this situation? In clarifying this, I have divided the pie into four zones. The inner zones, 1 and 2, represent the knowledge and concepts that all physicians should share in common. Thus zone 1 represents the four formal years of medical school and zone 2 the usual one year of internship. Note how little of the total body of medical knowledge can be brought into this five year experience. The selection and integration of the proper amount and kind of subject matter and its translation into something useful and effective during these five years is both important and difficult. It is also expensive.

Before I proceed further, I would like to define three terms: (1) undergraduate medical education: the term applied to the classical four years of medical school; (2) graduate medical education: the education that continues after the intern year and precedes entry into practice; and (3) postgraduate medical education: any and all of the educational effort necessary to keep up after the physician enters practice. The internship is "sandwiched" in between the finishing of medical school and the beginning of graduate work.

Zone 3 represents the period of graduate or specialty education (residence training). In a field as large as medicine, segmentation or specialism is inevitable. Even general practice has assumed specialty status, in that those men and women who are going to emphasize it must undergo a period of from one to three years of special training. Since the educational experience during the graduate years will vary according to the individual's choice of study, the outline of this zone will be irregular and the pattern of the irregularity will depend on the relative amount of emphasis that the specialty requires of the various basic and clinical sciences. The zone 3 outline (profile) I have shown is the one that would be set up for a physician taking training for the specialized practice of industrial medicine. Note how much of the total body of medical knowledge the specialist must still leave untouched. Postgraduate or continuing education is represented by zone 4. This is the educational effort that the physician, if he is to keep up, must make on his own after he has left the confines of the educational institution. Here again the educational effort must be confined to special interests. I have marked with an "x" those areas in which the industrial physician would most likely maintain a postgraduate interest.

In appreciating the significance of the figure, it is important to know that the four years of undergraduate medical education (zone 1) must take place in a medical school. The intern (zone 2), graduate (zone 3) and some of the postgraduate (zone 4) educational experience may or may not take place in an institution of which a medical school is the essential core. In other words, intern, graduate and postgraduate education is offered, and effectively so, by nonmedical-school-connected hospitals and related institutions. On the other hand, if a medical school is to be effective, it must be a part of a set-up in which intern, graduate, and postgraduate education also plays an important part. This is so because the kind of faculty, the kind of research, and the kind of patient and community service that is essential to good undergraduate teaching cannot be gotten and held together unless good intern, graduate, and postgraduate teaching is also going on. In fact, the medical school is the absolute essential on which and from which our entire system of education for all health service must stand. This is a point that I elaborated on at length in the preliminary remarks in a paper published in 1953 that was reprinted and widely distributed by the National Fund for Medical Education.[1]

PUBLIC HEALTH AND PREVENTIVE MEDICINE

Previously I indicated the importance of the industrial physician being one who has capacities, interests, and abilities in the humanistic aspects of medicine. I say this because of the importance of preventive medicine in industrial practice. In the immediate years ahead I believe that one of the most important advances in the field of medicine will be in the promotion and maintenance of health, in the prevention of deformitive disease, and in the prevention of and the rehabilitation from disease. The staggering costs of absenteeism from work because of illness and its concomitant in human misery and domestic dislocation are well known. The answer lies in the maintenance of health and the prevention of ill health. Health is more than the absence of disease. It is defined by the World Health Organization as a "state of complete physical, mental and social well being." Like disease, health has its causes and is subject to evaluation and management. Also like disease, the causes of health and therefore the factors important to its evaluation and management are often to be found in the individual's personal and community environment. But health, unlike disease, is relative and can therefore be thought of as perfect, fair, or poor. Finally, in between the extremes of manifest disease on the one hand and good health on the other, preventive medicine, must concern itself with the recognition and control of nonmanifest or asymptomatic disease. Cancer, heart disease, tuberculosis, and diabetes can be discovered and brought under management long before their victims are aware that anything is wrong.

Until rather recently the terms public health and preventive medicine have been considered synonymous. While both fields are concerned with the preservation of health and while the concerns and functions of both may overlap to a great extent, it is important that the two fields be understood. The approach and philosophy of the professional people in public health is very different from that of the physician in the practice of personal health maintenance and personal preventive medicine. Health development and protection at the public health level implies the feasibility of assembly line methods and the involvement of very little personal responsibility on the part of the individual recipient of service. The application of health and preventive services at the level of the physician-patient relationship is the very antithesis of the assembly line method and implies the greatest of responsibility on the part of the individual receiving service. In other words public health is concerned with the health of the group more than with the health of any one person. Since the industrial physician will be dealing with both groups and single individuals, he must have considerable knowledge of public health as well as of the knowledge, techniques, and art that make him effective in the personal patient-physician relationship. The practitioner in industrial medicine will find himself depending on both assembly line and "made-to-order" individualized methods.

If all of these concepts are to be added to medicine's armamentaria, the basic philosophy of the continuing care of health will gradually replace that of the episodic care of illness; and as a consequence in the education of the physician, emphasis will shift away from the patient on his back to the individual on his feet, and from the patient in the hospital to the individual in his home and community. Such are the broadening challenges facing medicine and the institutions that are responsible for the training of its practitioners. These challenges cannot be fully met unless the teaching activity can be extended beyond the physical limits of the institution into the community—into the places where people work and live—where people stay well and get sick. That is why many medical schools are leaning away from the classical curriculum. Deviation from the status quo implies the trying of something new, something different. The financing of something new or something different in education is always difficult, particularly at a time when financing is already short. Yet if progress is to be made, the something different must be tried. While the class A and B grants of the National Fund for Medical Education are essential to the strengthening and the maintaining of the basic educational programs of all of our medical schools, it is to be hoped that before long class C grants, those that will make experimentation in medical education possible, will be forthcoming. This will be necessary if the teaching of preventive medicine is to catch up and keep up with its potential. The research, the teachers, and the development of model programs, so that the undergraduate student can see the challenge and the graduate student can satisfy the challenge that is inherent in the practice of preventive medicine, are essential if the service need is to be met.

While industrial medicine involves more than preventive medicine, and may involve specialists other than those primarily interested in preventive medicine, it seems to me that the ideal in industrial medicine must be prevention. It is my firm conviction that preventive medicine according to the concepts I have outlined will be the next most important development in medicine's effec-

1. Darley, W.: Financial Status of Medical Education, J. M. Educ. 28: 11-20 (Feb.) 1953.

tiveness. The industrial or commercial concern employing large numbers of individuals plus the community in which these individuals live should constitute the near perfect laboratory in which the effectiveness of preventive medicine can be demonstrated. Here is the cooperative situation in which health inventories, case-finding programs, and programs of health education can take place.

It was my privilege to be present at the first two meeting that eventually led to the organization of the National Fund for Medical Education. Since the organization of the fund, because of my position with the Association of American Medical Colleges, it has been my privilege to watch the development of the fund's program with a great deal of interest and pleasure. Speaking for the medical colleges in general and the University of Colorado in particular, I can say that the annual A and B grants have been the difference between weaker and stronger medical education. The fund has been in successful operation long enough so that I think its continued and growing success is assured. For this we are truly thankful. The foresight and interest of those of our business and industrial leaders who have brought the National Fund for Medical Education into being and who have built it to its present stature is deeply appreciated, particularly by those of us who have been struggling with the day-to-day problems of building up a program of education that can satisfactorily translate the growing body of medical knowledge into effective service. Medical schools must keep the gap between what is known and what is done as narrow as possible. In this day of hustle and bustle and at a time when medical knowledge is advancing so very rapidly, this is not easy. To me, this much is certain: the continued help and interest of industry and business is essential if we are to do our job.

CONCLUSIONS

I would like to conclude with a suggestion. In four years of medical school we cannot turn out individuals proficient in industrial medicine. We cannot do this any more than we can turn out accomplished surgeons. But we might produce graduates who have more of an appreciation for and an interest in the medical and health problems of industry. If this appreciation and interest is to be translated into the attraction of physicians into full-time industrial practice, much will depend on the development and maintenance of the best possible professional challenge in this field. Therefore, to the end that the need for industrial physicians might be filled better, I wonder if a working conference involving carefully selected representatives from (1) those medical schools with access to resources for research and training in industrial medicine, (2) industrial management and labor, and (3) the more successful industrial health services might be of help.

Time and space do not permit me to speculate as to what the nature of the "best possible" challenge would have to be. Suffice it to say that there must be a challenge and that its breadth and depth must be well understood. A meeting, patterned after the Colorado Springs Conference on the Teaching of Preventive Medicine,[2] might serve to define this challenge and, once this was done, to give consideration to ways and means of attracting and developing the men and women needed to meet it.

2. Darley, W.: Preventive Medicine in Medical Schools, Report of Colorado Springs Conference, November, 1952, J. M. Educ. 28:1-123 (Oct., pt. 2) 1953.

INDUSTRY'S STAKE IN MEDICAL EDUCATION

Robert E. Wilson, Chicago

This conference was comprised of leaders in medical education and physicians in industry sitting down to discuss mutual problems with representatives of the business community. The latter group, whom I represent, listened with profit to Ward Darley, president of the University of Colorado, as he has told of today's role of the medical school, and to Dr. Vonachen, with his wide experience of medicine in industry. I wish I could be as helpful and constructive in presenting the thinking of business as it relates to the medical problem. As a spokesman for management, it is with great satisfaction that I point out that corporate management has made much progress in our business generation, recognizing values and responsibilities in the conduct of its affairs that were undreamed of by our predecessors. This shift in emphasis is one of the most significant achievements of the American business community in the past 20 or 25 years.

American business has long demonstrated world preeminence in the areas of invention and production. Corporate management is now accepting the responsibility of corporate citizenship—for corporations are social institutions as well as producers of goods and services. It is now generally recognized that a corporation is not just a soulless entity run by management for the short-run benefit of stockholders, but a complex organization embracing its customers and workers, their families, and the community in which they live. Far from being just a static entity, as it may have once been regarded, today's business enterprise is a progressive force—its every action inescapably woven into the fabric of national and community life. To use a homely Quaker phrase, good business has a "concern" for the public good. We now see what escaped us a generation ago, that in this quality of enlightened management, this social responsibility, lies the departure of democratic capitalism from the feudalism of the past. Herein lies the great difference that sets our way of life apart from totalitarianism. It is not paternalism, but it is partnership.

In this context, American business today recognizes its responsibility toward higher education. Both business and education flourish in the American culture, springing from common roots. The interest of educators in preserving academic freedom is closely related to that of

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businessmen in preserving freedom of enterprise. In a narrower sense, business leadership and enlightened management are increasingly dependent on our system of higher education. Each year a greater proportion of people in management, from the top echelons down through the ranks, are college graduates. This is even more true with respect to the engineers, technicians, and other specialists on whom our industrial economy increasingly relies. Colleges, universities, and graduate schools supply the vital force for productive America, and the supply of new graduates, especially in the fields of science, engineering, and medicine, seems never to meet the demand. This is undoubtedly a great incentive to our young men and women with their expanding opportunities for education, but it likewise puts heavy demands on institutions facing the huge task of meeting the needs we have posed. Thus, it is just plain self-interest on our part to safeguard the sources of our leadership—in the business community as in our civic, political, and social life.

There is a national interest at stake here, too. To maintain high productivity and national security during this protracted cold-war period, we must give unremitting attention to our educational institutions—the sources of the scientists and engineers and other trained men necessary for sustaining our position of world leadership. Do not think our present leadership is going unchallenged. A recent survey by the *New York Times* describes the enormous acceleration in technical education behind the Iron Curtain. They are today turning out many more engineers than we are, though I am inclined to be doubtful of their quality under a totalitarian system of education.

But to turn to medical education, at the annual meeting of the World Medical Association in Rome last fall it was revealed that the United States now stands fourth among the nations in the ratio of doctors to the population. Austria, traditional source of the "Viennese surgeon" and other medical specialists, still leads in saturation of medical care, with 17 doctors for every 10,000 persons. Germany comes next with 15, Switzerland follows with 14, and the United States figure is 13.3 doctors per 10,000 people. Those figures are, of course, quantitative, and it is my belief that our country is still unmatched in the quality of its medical education and its medical care. But the figures at least show that we cannot afford to relax our efforts in the field of medical education.

RELATIONSHIP OF INDUSTRY AND MEDICINE

The relationship between industry and medicine is familiar to all of you. Dr. Vonachen has made crystal clear the tremendous contribution being made today by medicine in industry. My purpose is to make equally clear why industry, from large corporate management to the smallest business enterprise, has a stake not only in industrial medicine but in all medical practice and, hence, in all medical education. I think businessmen should consider this problem mainly from the community rather than merely the employee point of view. Corporations are today social institutions exerting a wide influence beyond the plant gates in the areas where they operate—and the community attitude in turn affects the corporation. On this premise, management surely has a responsibility toward the entire community. Our corporate well-being is directly related to the quality of the schools in our plant community, to the efficiency of police and fire protection, to the good operation of the health department, and to the medical and hospital care available.

There are various ways in which a corporation can help the various health agencies in a community. Community Chest funds help solve part of the problems created by a multiplicity of different needs that a corporation cannot appraise separately. Individual disease drives and hospital campaigns involve much duplication of effort, and create almost impossible problems of appraisal for the larger corporations, except for hospitals directly related to their major plants. It seems to me that the larger corporations in particular can most properly and efficiently do their part by supporting medical schools whose financial problems are staggering. All of these hospitals, all of these health services, all of our medical care—whether operating in the plant or across the town—are dependent on one common source of medical knowledge, the medical schools themselves. Our 80 medical schools are the seed-beds wherein our doctors are trained—at a current rate of about 7,000 per year. These schools are also centers for much vital medical research that is prolonging life and our ability to enjoy it. These very advances are, however, placing an increasing burden on medical education, coming at a rate that challenges the teaching programs and makes medical education the most costly kind of education. Schools not only must keep their high standards of medical training but must hasten to translate medical discovery into practice, to bridge the gap between the research laboratory and the patient.

The medical schools are not simply local institutions. In truth, there is today no such thing as a local medical school. Surveys show that each medical faculty has a high proportion of talented teachers trained in other schools, in other states, while more than half the graduates of a medical school go forth to practice in states other than those in which they were educated. Thus, American medical education is a national network of teaching, research, and clinical centers, calling for broad national support. The National Fund for Medical Education appears to me to constitute a logical national "Community Chest" for effective solicitation and distribution of corporate gifts. Last year it made much progress in getting corporate gifts, though they still are far less than minimum needs.

I have perhaps spoken in rather general terms of the relationship of American business to American medical education. I have tried to set forth, as one who daily deals with the problems of corporate management, the increased community and national obligation of industry in America today. There is, happily, a growing understanding and cooperation between business and higher education, including, of course, medical education. This partnership stems from a recognition of the social responsibility of all of us—management and shareholders, workers and the entire community—who have together made our country great and wish to keep it a good place to live in—in peace and contentment—and in good health. Business cannot and should not shoulder the main responsibility for aid to education in general, or for medical education in particular; however, we should certainly examine the needs and then, with all the wisdom and judgment at our command, assume our fair share of responsibility in solving this tremendous problem.

MEDICINE IN INDUSTRY

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The impact of medicine on industry has been so well established that there can be no returning, for industries with well-established medical programs are continuously searching for more ways of utilizing the potentialities that make for optimum health in all facets of their organization. Medicine's contribution to industry lies particularly in the fields of prevention and medical education, with the benefits thus derived extending to the family physician and the community at large.

Physicians feel that any financial advantage that might accrue as a result of an adequate medical program should be considered a by-product, for the main purpose of good medical services is not to make money but to make health. However, industrial medicine does save funds in the following ways: 1. Prompt treatment prevents infections and other complications, thereby shortening the length of the disability. 2. It helps control medical, hospital, and insurance expenses. 3. Good medical care is more economical than high compensation payments and settlements. 4. Healthy workers are more productive. 5. Costly disabling injuries and diseases are prevented before they occur. 6. It decreases absenteeism from illnesses nonoccupational in origin. 7. It helps prevent the loss of management persons through illness or emotional failure.

A well-defined medical program benefits the employer as it affords better job placement, assures a healthy work force, improves employer-employee relations, promotes safety and good community relations, and permits proper placement and use of handicapped persons. The employee benefits because it affords proper job placement, informs him about his physical condition, aids in adjustment to his work, protects fellow employees, assists in up-grading, increases period of gainful productive employment, insures a more stable economic security, and prevents development of disabling diseases. Adequate proof has repeatedly been found to demonstrate that a complete health program in industry contributes directly to the health of a community. Who can doubt that preplacement and return to work examinations, periodic physical examinations for management people, and emotional health counseling are tremendous tools in helping the family physician make a proper diagnosis?

A specific example may be found in a recent report by the Peoria Municipal Tuberculosis Sanitarium. It revealed that in 1944 there were 174 new cases of tuberculosis with 41 deaths in the city of Peoria. That same year, the Caterpillar Tractor Company began its program of routine chest roentgenograms of all new employees. In 1954—10 years later—there were only 40 new cases of tuberculosis with eight deaths. Dr. Daniel Morse, medical director at the sanitarium, asserted in his report that one of the contributing factors was "the pre-employment X-rays taken in Peoria's largest industries as a method of safeguarding employees." It would be impossible to discuss here in detail the entire gamut of services encompassed in the functions of an industrial medicine program. A well-rounded medical program would include such services as preemployment examinations; job placements; periodic and return-to-work examinations; transfers; handicaps; occupational hazards and control; health education; nutrition; vision and audiometric testing; mental health; management and administrative health; compensation medicine; control of syphilis, tuberculosis, and alcoholism; and many other day-by-day, ever-changing functions. Let us focus on just three of the aforementioned duties: mental health, health education, and management health.

Medical Director, Caterpillar Tractor Company.

Read at the Conference on the Modern Corporation and the Nation's Health, sponsored by National Fund for Medical Education, Chicago, Feb. 8, 1955.

MENTAL HEALTH AND HEALTH EDUCATION PROGRAMS

The importance of mental and emotional health in industry was recognized many years ago by top management persons and medical personnel at Caterpillar Tractor Company. Consequently, a mental health section was established within the medical division. Three psychologists interpret routine placement tests, provide counsel in mental health problems (such as family and marital difficulties, psychosomatic complaints and personal adjustment problems), assist in the promotion and placement of executives, screen applicants for vehicle operators, and conduct a supervisory program in human relations. The importance of the problems of mental health is reflected in the many statistics throughout the United States on this subject, particularly as they pertain to the number of admissions to and the lengths of stay in hospitals. However, aside from the problems of mental health in terms of hospital facilities, it has been estimated by the National Association for Mental Health that one-half of the calls made on physicians for medical care for any reason, especially those involving complaints of abnormality of the heart, head, or digestive tract, are emotional in origin.

In reviewing the mental health problem in industry, 60 to 80% of all separations from the job are said to be due to social incompetence, while only about 20 to 40% are caused by technical incompetence. We find that a major weakness in the systems of health maintenance operating at this time has been the lack of knowledge and effort concerning the emotional factors in illness. The majority of the people in the United States are either gainfully employed or are dependents of gainfully employed individuals. This means that the problem of mental health is related primarily to the employee and, therefore, to the industry in which he works. This is obviously reflected in the problems that are encountered on the job. For example, the life of the worker outside of his employment situation may determine his success or failure at work. Family health problems may keep him off the job. Domestic conflict can cause absenteeism and accident-proneness. Alcoholism, now considered an illness, is a serious problem in some industries. Occupational health aims at the promotion and maintenance of the highest degree of physical, mental, and social well-

being of workers in all occupations. The newer approach calls for an understanding of the attitude of the workers; it calls for a knowledge of group morale, and it calls for psychological insight about top management itself.

Another important function of the medical program at Caterpillar is health education. Physical and emotional abnormalities uncovered during examinations and tests are discussed with the individual concerned. Health suggestions or referrals to physicians and community agencies are made when advisable and requested. The nurses, physicians, and psychologists daily counsel employees and applicants on health problems. Articles on health matters are published in plant periodicals. Pamphlets, placards, and bulletins on current medical and health problems are available for distribution or posting. In this manner we cooperate with community groups and with local, state, and federal public health agencies. We are particularly interested in conveying to all employees the value of proper nutrition and a well-balanced diet. Studies have shown that such practices are advantageous not only in the industrial environment but also in the home and in the entire community.

MANAGEMENT HEALTH PROGRAM

Finally, there is the management health program. It was recognized as early as 1940 that the health of the executives needs constant guidance and observation, so that the development of any impairment may be detected in ample time to avoid losing the services of these key people through illness or emotional failure. There are certain factors that constitute a particular danger to this group. Their hours, for example, are undefined. Their work is not measured by time served, but by goals achieved; and their working day often extends far beyond recognized hours of employment. The tension of their activities becomes the tension of much of the entire day, with its accompanying physical and mental manifestations. The physical examination given to executives is complete and includes a chest roentgenogram, eye examination, urinanalysis, blood determinations, basal metabolism, and an electrocardiogram. Other laboratory measures are utilized when indicated.

These examinations contribute materially to daily health through attention to minor deviations from the norm in respect to weight, blood pressure, headaches, tension states, indigestion episodes, and fatigue. We are consulted promptly for any unusual symptoms that may appear. In this manner, we, as medical men, can be looked on as "trustees of human health." Because we have the individual's confidence, because he is acquainted with our type of health service, and because he is aware of the value of early symptom evaluation and diagnosis, he benefits accordingly at a time when he can really be helped. The annual physical examination program for Caterpillar executives is voluntary and is in charge of company medical personnel. For many years participation has been 99.9%, due in large part, we believe, to the close kinship developed between the executive and the examining physician. This has helped persuade the executive to consult the physician on all matters pertaining to his mental and physical health, as well as on health problems of workers under his supervision. All laboratory and x-ray work is conducted in the company's completely equipped medical quarters. When there is need for more specialized tests, the medical director arranges for examinees to see outside specialists at company expense.

Another area of the management health program is that of medical counseling about health and job attitudes, family life, religious affiliations, and recreational habits. During the interview at the time of the annual physical examination, the importance of following through on recommended remedial work is impressed on the examinee. He usually makes an appointment for follow-up treatment at that time. For overweight executives there is what is known as a Fat Man's Club. Any company executive who is overweight automatically becomes a member of the club. He is presented a membership card which states: "Membership will be relinquished when weight reaches 'x' number of pounds." A whimsical touch, perhaps, but it is surprising how effective it is.

Another phase of the management health program is the requirement that all executives take annual vacations. The doctor enforces this ruling by contacting the superior officers of those who may be inclined to neglect annual leaves and pointing out the importance of getting those persons away from the job.

Over-all benefits accruing to Caterpillar's management health program may be summarized as follows: 1. The program is a morale builder because it is a positive approach to health. 2. Through the close relationship formed between the executives and the examining physician, the executive attains a clear understanding of his physical condition and learns to take care of his health. 3. The program reveals incipient physical impairments that may be remedied before they become serious. 4. As the physical examinations continue year after year, they become a medical audit of the management group. So successful has been the executive health program that we are in the process of extending these facilities to all our people in management.

COMMENT

From the analysis of the above functions, it becomes clear that industrial medicine today is indeed a specialty. Because a physician in industry must have knowledge of all its complex workings, he must have special training and education. Over and above his medical education, he should be trained in industrial hygiene, workmen's compensation, insurance medicine, safety, psychiatry, medicine for the aged, and departmental administration. We are living in an industrial world, and the need for highly trained specialists in industrial medicine is becoming more and more apparent. It may be noted that over 99% of the nation's employers maintain a roster of less than 500 people, about 60% of whom are industrial workers. Yet few of these people have access to a planned health program. In industry emphasis today is on people, the most important and most valuable asset that it has. The individual's capacity to work safely, productively, and in good health must be brought into play. The industrial health program has played, and is playing, a most important role in safeguarding the health of the nation's work force, which is our greatest bulwark to assure our survival as a nation.

CLINICAL STUDY OF A NEW TRANQUILIZING DRUG

USE OF MILTOWN (2-METHYL-2-*n*-PROPYL-1,3-PROPANEDIOL DICARBAMATE)

Lowell S. Selling,† M.D., Ph.D., Dr. P.H., Orlando, Fla.

Anxiety neuroses or tension states occur so frequently that there is a real need for rapid therapy to relieve the patient and enable him to recover. Attempts to find a useful drug are being made constantly, and among the most promising of these drugs are the propanediol derivatives developed by Berger.[1] Studies of mephenesin suggested that tension states and other psychoneurotic conditions could be alleviated,[2] but the drug was not consistent in its activity. The second propanediol derivative to appear was 2,2-diethyl-1,3-propanediol, which showed much more promise.[3] Although it was consistent in its control of tension states, its duration of action was too short. The most recent compound of this type, Miltown (2-methyl-2-*n*-propyl-1,3-propanediol dicarbamate), is the subject of the present study. The pharmacology of Miltown was described by Berger. The drug has a selective blocking action on interneurons. It produces relaxation of skeletal muscles without affecting respiration and other vital functions and also has important effects on the brain.

MATERIAL AND METHODS

The present study was made on 187 patients who came into my office between Jan. 15, 1953, and April 1, 1954. All were examined physically, by the referring physician, by a medical consultant, or by myself. If any patient showed signs of an organic neurological disorder, or any other physical ailment, either during the physical examination or in the laboratory tests, he was eliminated from the study. Patients who were clearly psychotic were also excluded, although some are included here who were felt to be on the borderline between an anxiety neurosis and a psychotic depression. If the depressed patient did not respond to Miltown in one week, he was treated in some other manner; however, any patient who received Miltown as part of his treatment is tabulated. There was no separate group of control patients, but some of the patients taking Miltown later received placebos for control observations.

Miltown was supplied in 400 mg. tablets. The usual dose was one tablet after each meal and one at bedtime. During the study reported here, 54,100 tablets were dispensed. The largest amount of drug consumed by a single patient, over a period of more than 15 months, was 860 gm. The maximum daily dose was eight tablets for a 105 lb. (47.6 kg.) patient who was in a tension state. The dose was reduced after three weeks. Most patients were maintained on a standard dose of Miltown: one tablet (400 mg.) after each meal and one at bedtime. As soon as possible the dose was reduced, and finally the drug was withdrawn. All patients had regular sessions of psychotherapy in addition to treatment with the drug. Usually there were three sessions a week for the first two weeks and two a week for the next two. Then the appointments were stretched out until a maximum interval of six weeks was reached. Soon after this, both drug therapy and psychotherapy could usually be discontinued.

RESULTS

The diagnoses and results of treatment are summarized in the table. The following remarks will clarify some of the terms used in the table. The patients in a tension state were those who complained primarily of feeling "tight." They frequently said, "I get so tight and my muscles are so taut that I can't sleep." Very frequently, they had a headache that they located at the base of the skull. These patients had a minimum of fear or anxiety. In the anxiety state group are those who have very obvious symptoms of anxiety psychoneurosis.[4] Alcoholism, as used in 10 cases here, applies to persons who came to the psychiatrist while they were drinking. The children with behavior problems were all restless and tense. Most patients with involutional depression who are listed here were primarily depressed rather than tense and had a great deal of difficulty in standing the heat. I use the term psychasthenia to refer particularly to the obsessive-compulsive-ruminative type of psychoneurotic. These patients complained primarily of ideas that kept forcing themselves back into their consciousness and of actions they had to perform in order to remain comfortable. The patients with paranoid states who are listed were nonpsychotic with fairly intact personalities and had some mild delusions, usually of infidelity.

It appears that Miltown was of considerable value in anxiety and tension states. Related psychoneurotic conditions, such as behavior problems and conversion hysteria, were also favorably influenced. In alcoholism, Miltown helped to avoid serious withdrawal symptoms and assisted in keeping alcoholics sober after withdrawal was completed. In frank psychoses, the results are not so favorable but may merit additional studies. It is interesting to note how patients with various types of symptoms responded to treatment with Miltown. These results are summarized below.

Headache.—The most dramatic reports of recovery or improvement in the patients who were given Miltown came in those cases where the patient's chief complaint

† Dr. Selling died Jan. 18, 1955.

The Miltown for this study was supplied through F. M. Berger, M.D., Research Director, Wallace Laboratories, New Brunswick, N. J.

1. Berger, F. M.: The Pharmacological Properties of 2-Methyl-N-Propyl-1,3-Propanediol Dicarbamate (Miltown), A New Interneuronal Blocking Agent, J. Pharmacol. & Exper. Therap. 112:413 (Dec.) 1954. Hendley, C. D.; Lynes, T. E., and Berger, F. M.: Effect of 2-Methyl,2-n-Propyl-1,3-Propanediol Dicarbamate (Miltown) on Central Nervous System, Proc. Soc. Exper. Biol. & Med. 87:608 (Dec.) 1954. Berger, F. M., and Bradley, W.: The Pharmacological Properties of α,β-Dihydroxy-γ-(2-Methylphenoxy)-Propane (Myanesin), Brit. J. Pharmacol. 1:265 (Dec.) 1946. Berger, F. M., and Ludwig, B. J.: The Anticonvulsant Action of 2,2-Diethyl-1,3-Propanediol (DEP) and Some of Its Homologues and Esters, J. Pharmacol. & Exper. Therap. 100:27 (Sept.) 1950.

2. Hermann, I. F., and Smith, R. T.: 3-o-Toloxy 1,2-Propanediol in the Treatment of Rheumatic Diseases, Journal-Lancet 71:271 (July) 1951. Paul, L.: Mephenesin in Anxiety-Tension States, Psychosom. Med. 14:378 (Sept.-Oct.) 1952.

3. Selling, L. S.: Findings in Patients Suffering from Anxiety States Treated with a Muscle Relaxant, South. M. J. 46:1204 (Dec.) 1953.

4. Selling, L. S.: Synopsis of Neuropsychiatry, ed. 2, St. Louis, C. V. Mosby Company, 1947, p. 450.

was tension headache. The tension headaches are characterized by being located at the base of the skull and usually were linked up with a feeling of tension or a feeling of being "keyed up." Of 27 patients with this complaint, 23 either recovered or reported sufficient improvement so that they were not concerned with this symptom.

Tension, Anxiety, and Fear.—Miltown was of considerable value in relieving tension. Of 86 patients complaining of this symptom, all but 7 showed marked improvement. The tension state was usually relieved in three to four months. The average office patient had great difficulty in distinguishing between anxiety and fear. I have not differentiated but rather have included both symptoms to show the value of this therapy in such cases. Ninety per cent of the patients showed improvement with therapy.

Depressive and Manic Symptoms.—Patients who coupled the complaint of depression with vague fears and a feeling of tension and anxiety usually derived benefit from Miltown, but those who were suffering from a psychotic depression did not markedly improve. There were 14 patients who had to have electroshock treatments after Miltown had been tried, with unsatisfactory results. One other problem faced by the psychiatrist in office practice has been the control of hypomanics who were obviously disturbed but were not committably psychotic. Four patients had obvious manic symptoms. This number is insufficient to justify a dogmatic statement, but, in all four patients, treatment with Miltown made it possible for the family to keep the patient at his daily occupation in such a way as to cause a minimum of trouble or comment by fellow workers. The manic symptoms recurred almost immediately when use of Miltown was discontinued.

Menstrual Stress and Psychosomatic Symptoms.—Five patients with menstrual stress, so called because their tension was limited only to the time of their period, stated that while taking Miltown the stress diminished markedly until they were symptom-free and were discharged. Psychosomatic pain, which was found in 23 patients with stomach distress, and peripheral pain, found in 2 patients, responded to Miltown in the majority of cases. In three patients with neurodermatitis who were treated with Miltown, the condition cleared within a reasonable time (from one month to six weeks).

Sleep.—It was apparent at the start of this study that poor sleeping behavior was easily corrected. Since receiving my first shipment of Miltown for clinical trial in January, 1953, I have not needed to use a barbiturate or similar somnifacient to engender sleep in any patient. By adjusting the dose of Miltown, it has been possible to produce sleep in every patient except in those suffering from a true psychotic depression. Twenty-one patients who were recovering from electroshock treatment had considerable difficulty in going to sleep without medication for a period of from two to four weeks. In each of these patients, a single Miltown tablet helped to bring on sleep, and the nightmares that so often occur on discontinuance of electroshock treatments were not usually noted. Dreams almost never occurred with Miltown. When Miltown was used to replace other soporifics when dreams were the source of complaint, the dream disappeared. An interesting feature of therapy with Miltown is the lack of drowsiness during the morning when the medicament has been administered the previous night.

Miltown as an Adjunct to Psychotherapy.—The psychotherapist has patients with whom he cannot achieve rapport. It was found that all patients became more responsive to suggestion, to hypnosis, and to free association (conversational or discursive) therapy. Several patients who had emotional blocking in early psychotherapy sessions responded adequately after taking Miltown. The feeling of ease and relaxation that Miltown brought about very definitely increased the patient's confidence in the physician and broke down his emotional defenses.

Comparison of Miltown with Phenobarbital and Placebos.—I have records of 19 of the patients treated with Miltown who had taken phenobarbital before coming to me for treatment. None of these patients preferred phenobarbital to Miltown. Two patients were given phenobarbital instead of Miltown because they complained of sleepiness while taking Miltown, but, in a short time, they asked for a restoration of Miltown administration. Placebos identical with Miltown in all but taste were given to 16 patients who had been receiving Miltown. Before the end of a week, all of them complained so much about the return of their symptoms that they had to be returned to Miltown therapy immediately. Miltown is not habit forming in the pharmacological sense, and tolerance did not develop. Most of my patients discontinued taking Miltown without difficulty and usually of their own volition. Long-time users did not require increased doses to get the Miltown effect but spontaneously were able to cut down the dosage.

Results of Miltown Treatment in Psychiatric Patients

Diagnosis	No. of Patients	Recovered	Improved	Not Improved	Improved or Recovered, %
Tension state	43	17	24	2	95
Anxiety state	29	10	17	2	93
Alcoholism	10	5	4	1	90
Behavior problems, children	10	1	6	3	70
Conversion hysteria	19	6	6	7	63
Involutional depression	16	6	7	3	81
Situational depression	7	3	2	2	..
Psychasthenia	4	0	3	1	..
Posteleetroshock confusion	13	9	3	1	92
Organic confusion	9	2	5	2	..
Paranoid psychosis	4	2	2	0	..
Psychotic personality	5	0	1	4	..
Manic-depressive psychosis, manic state	4	2	2	0	..
Manic-depressive psychosis, depressed state	6	0	3	3	..
Schizophrenia	5	0	1	4	..
Other diagnoses	3	1	2	0	..
Total	167	84	85	35	..

Duration of Treatment.—Patients were treated for periods of time ranging from less than a month to more than eight months. Most of these are considered to have recovered, but 12 patients have remained in the same condition, although the dose of Miltown has been cut to one tablet a day and is probably providing only psychological support. In about half the patients, withdrawal from Miltown could be effected within a week. In the

other half, careful and gradual withdrawal was necessary, and, toward the end, placebos were sometimes substituted.

Adverse Reactions.—Only three patients were truly allergic to Miltown. The first had two fainting spells and a temperature of 102 F two and a half hours after administration of two tablets. He was given 150 mg. of tripelennamine (Pyribenzamine) orally every four hours, but it took two days for his temperature to go down and for edema to disappear. He was not given any more Miltown. Urticaria developed in the second patient after four days of treatment with Miltown. She was given 50 mg. of diphenhydramine (Benadryl) hydrochloride with each dose of Miltown, which controlled the urticaria. An angioneurotic edema developed in the third patient after Miltown had been taken for six days. The edema cleared up in one day after discontinuance of Miltown therapy. Five patients complained of gastric discomfort after taking Miltown. One woman weighing 107 lb. (48.5 kg.), who was suffering from an anxiety neurosis, took 20 gm. of Miltown over a period of 24 hours. When seen, she was markedly sleepy and her pulse rate had slowed to about 40 per minute. She was kept awake by keeping her moving and by administering hot coffee over a period of two hours. Later she was allowed to go to sleep, and she awoke after 10 hours. A male patient hoarded a supply of Miltown and probably ingested about 100 tablets (40 gm.) within 24 hours. He suffered no serious adverse effects. From these examples, I believe that this drug can be considered comparatively nontoxic.

SUMMARY AND CONCLUSIONS

Miltown (2-methyl-2-*n*-propyl-1,3-propanediol dicarbamate) is a practical, safe, and clinically useful central nervous system depressant. It is not habit forming. Miltown is of most value in the so-called anxiety neurosis syndrome, especially when the primary symptom is tension. Miltown is also useful in keeping alcoholics sober after withdrawal is completed, and it has much value in accomplishing withdrawal with a minimum of discomfort. Favorable results have also been obtained in neurogenic conditions of the skin, in abdominal discomfort, and in several kinds of headache. Miltown is an effective dormifacient and appears to have many advantages over the conventional sedatives except in psychotic patients. It relaxes the patient for natural sleep rather than forcing sleep.

STUDY OF EFFECT OF MILTOWN (2-METHYL-2-N-PROPYL-1,3-PROPANEDIOL DICARBAMATE) ON PSYCHIATRIC STATES

Joseph C. Borrus, M.D., New Brunswick, N. J.

The search for a medicament with sedative and relaxant properties has been a never-ending one in the progress of medicine. The earlier agents used included paraldehyde, chloral hydrate, and bromides. In 1903,[1] the use of barbituric acid and its derivatives was a significant advance in this field, until the accompanying hazards of addiction, overdosage, and toxicity became apparent. While barbiturates are still the most widely used medicaments, the search progressed with the use of anticonvulsants (especially hydantoin derivatives). Even antihistaminic agents play a lesser role as sedatives. Meparfynol has also been introduced as a sedative-hypnotic, but here one must be alert to the possibility of liver damage.

In recent years, mephenesin[2] has entered the field. Partial success has been obtained with its use in certain anxiety states,[3] in certain neurological and muscular disorders,[4] and as an adjunct in alcoholism. The relative success of this preparation suggested the possibility of other synthetic compounds having potential relaxant qualities but at the same time being entirely unrelated to anything heretofore used. Miltown (2-methyl-2-*n*-propyl-1,3-propanediol dicarbamate) is such a preparation. It was first synthesized by Ludwig and Piech[5] in 1950. Berger[6] reports its use as an interneuronal blocking agent and muscle relaxant. In addition, he cites possible anticonvulsant effects[7] and points out the lack of a stimulating effect common to most sedatives and hypnotics.

EXPERIMENTAL STUDIES

Experimental and toxicity studies were carried out first on animals and later on human beings.[8] The results failed to reveal any significant toxic effects from Miltown. In studies on animals, some sedative effect was noted, and the abolition of certain reflexes for several hours was seen with the administration of massive doses, a period significantly longer than in similar experiments with mephenesin. Berger[6] further reports that Miltown served to protect animals from electroconvulsive seizures more effectively than did trimethadione or mephenesin. In addition, it appeared to act as an antagonist toward pentylenetetrazole-produced seizures. Experimentally, it appeared to be about one-fifth as toxic as most barbiturates. Reports of clinical trials on human beings at the Metropolitan and Queens general hospitals in New York City[8] confirmed this lack of toxicity and listed drowsiness

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The Miltown used in this study was supplied by the Wallace Laboratories, Inc., New Brunswick, N. J.

1. Goodman, L., and Gilman, A.: The Pharmacological Basis of Therapeutics: A Textbook of Pharmacology, Toxicology, and Therapeutics for Physicians and Medical Students, New York, the Macmillan Company, 1942.

2. Berger, F. M., and Bradley, W.: The Pharmacological Properties of α:β-Dihydrcxy-γ-(2-Methyl-Phenoxy) Propane (Myanesin), Brit. J. Pharmacol. 1:265, 1946.

3. Schlan, L. S., and Unna, K. R.: Effects of Myanesin in Psychiatric Patients, J. A. M. A. 140:672 (June 25) 1949. Paul, L.: Mephenesin in Anxiety-Tension States, Psychosom. Med. 14:378, 1952. Dixon, H. H.; Dickel, H. A.; Coen, R. A., and Haugen, G. B.: Clinical Observation on Tolserol in Handling Anxiety-Tension States, Am. J. M. Sc. 220:23, 1950.

as a minimal side-effect. The present study involved 104 patients, 45 females and 59 males, who were a random selection from those referred to me in private practice for neuropsychiatric examination and treatment during a 12 month period in 1953-1954. All of these were patients who had failed to respond to barbiturate and mephenesin therapy. The diagnostic categories of these patients are shown in the table.

A study of the table shows that the largest group of patients had anxiety reactions. There were two cases of drug addiction and two of psychopathic personality. One patient with paralysis agitans and four chronic alcoholics were given the medicament but were not included in the group. The alcoholics failed to keep appointments; hence the reliability of their reports could not be established. An attempt was made to observe these patients over a six month period, whenever possible. As would be expected, only those patients who were getting favorable results could be followed over this length of time. Those who showed poor results, that is, who noted no change with medication, usually discontinued use of the medicament after a two to four week trial and are included in the 40 cases mentioned below. There was also a group who received sufficient benefit from Miltown so that their symptoms subsided after four to six weeks. This group discontinued use of the medicament voluntarily at this time, since it was no longer necessary. In all, 40 cases were followed for one month and 64 cases were followed from two to six months.

RESULTS

The medicament was offered to each patient with the following statement: "I am going to give you this medicine to see if it will help you." Every effort was made to avoid influencing the results by suggestion. The complete blood cell count and urinalysis, made before starting therapy and again after a two month trial period, were described as routine procedures to determine general health, and they seemed to be accepted as such by all patients. The results were evaluated and interpreted according to the following criteria: (1) patients whose symptoms subsided completely, both subjectively and objectively, and who returned to work and became socially productive—recovered (24 cases, or 24%); (2) patients in whom the symptoms subsided considerably, subjectively and objectively, and who, when they returned to work, became socially productive and either tolerated the minor symptoms or were undisturbed by them—very favorable (17 cases, or 16%); (3) patients in whom there were some favorable effects after medication, subjectively, and who became socially productive but were still looking for something further in the way of improvement—some favorable effect (30 cases, or 29%); and (4) patients who reported no effects on their symptoms from medication—no change (32 cases, or 31%).

Favorable results were reported in 71 patients, or in 68% of those studied. If this is broken down further into the categories mentioned earlier (see table), we note that 24 patients showed complete recovery from symptoms and were listed in the recovered group, 17 patients obtained very favorable results and were listed in this category, and 30 reported some favorable effect and were listed in the third, or favorable, category. The remaining 32, or 31% showed no change or no appreciable benefit from this medicament.

TOXICITY

Complete blood cell counts and urinalyses taken prior to and two months after continuous use of Miltown failed to reveal any evidence of toxic effect of the drug. A study of the afore-mentioned blood cell counts and urinalyses showed no evidence of anemia, leukopenia, glycosuria, acetonuria, albuminuria, or other alterations of the microscopic picture of the blood and urine. Thus, within the limits of the dosage used, one to six 400 mg. tablets daily, no serious side-effects or toxic manifestations were noted. The chief side-effect was drowsiness, which was mentioned by about one-half of the patients; however, this occurred primarily during the first two weeks of medication and gradually subsided as therapy was continued. In a few instances, reduction in the dosage eliminated this factor. One or two patients described an intensification of a preexisting headache, while others with similar complaints of headache felt that they had obtained considerable relief from the medication. There were no complaints of dizziness, vertigo, nausea, vomiting, diarrhea, or dermatological manifestations while the patients received medication. This would appear to be in accord with the findings of other investigators.[9]

Response of Patients to Miltown

Psychiatric State	No. of Patients	Results			
		Recovered	Very Favorable	Some Favorable Effects	No Change
Anxiety reactions	67	20	12	20	15
Acute	30	11	6	9	4
Chronic	37	9	6	11	11
Obsessive-compulsive neurosis	5	0	2	3	0
Conversion reaction	5	2	0	1	2
Reactive depression	9	1	0	3	5
Post-traumatic neurosis	3	0	1	0	2
Manic-depressive depression	3	0	0	1	2
Schizophrenia	8	1	2	2	3
Drug addiction	2	0	0	0	2
Psychopathic personality	2	0	0	0	2
	104	24	17	30	32

4. Berger, F. M., and Schwartz, R. P.: Oral Myanesin in Treatment of Spastic and Hyperkinetic Disorders, J. A. M. A. 137: 772 (June 26) 1948. Frantz, C. H.: Orally Given Mephenesin in Infantile Cerebral Palsy, ibid. 142: 424 (June 3) 1950. Bickers, D. S.; Cohn, G. A., and Rheinberger, M. B.: Progress in the Clinical Use of 3-(Ortho-Toloxy)-1,2-Propanediol (Mephenesin) in Neurologic Disorders, New England J. Med. 242: 502, 1950.

5. Ludwig, B. J., and Piech, E. C.: Some Anti-Convulsant Agents Derived from 1,3-Propanediols, J. Am. Chem. Soc. 73: 5779, 1951.

6. Berger, F. M.: The Pharmacological Properties of 2-Methyl-2-n-Propyl-1,3-Propanediol Dicarbamate (Miltown), A New Interneuronal Blocking Agent, J. Pharmacol. & Exper. Therap. 112: 413, 1954.

7. Berger, F. M.: Anticonvulsant Activity of 2,2-Disubstituted-1,3-Propanediols in Electroshock Seizures, Proc. Soc. Exper. Biol. & Med. 78: 277, 1951.

8. Berger, F. M.: Personal communication to the authors.

9. Footnotes 6 and 8.

COMMENT

The medicament seemed most effective in patients with both acute and chronic anxiety reactions. In this group of 67 patients, 20 were classified in the recovered group, 12 in the very favorable group, and 20 were in the favorable group, thus making a total of 52, or 78%, of these patients who obtained good results from Miltown, as opposed to 15 in whom no change was reported. The patients with anxiety neuroses composed the largest number of cases studied and are a much more reliable index statistically, of the effectiveness of Miltown than patients with the other diseases. The reports here revealed a reduction in tenseness, restlessness, easy fatigability, tremulousness, and palpitations and in the degree of hyperhidrosis. The ability to obtain more restful sleep was also a prominent finding.

The results in the remaining patients with neuroses, 22 in all, fluctuated between the favorable categories (13 persons) and the no change category (the remaining 9). Miltown proved more helpful in the obsessive-compulsive and conversion neuroses and less beneficial in the reactive depressions and post-traumatic neuroses. The number of cases studied that were classified as psychoses was unfortunately rather small, only 11. Three of these fell into the manic-depressive group and eight into the schizophrenic. It is difficult, therefore, to draw any conclusions from this small number, even though some favorable results were observed in five of the eight patients with schizophrenia. At this point, it must be mentioned that the schizophrenics were all ambulatory and were making marginal adjustments. In those cases where improvement was observed, the social adjustment seemed to be enhanced. It is questionable whether this medicament is sufficiently potent in ordinary dosage to be effective in the more severe psychoses.

Other investigators[4] have reported hypnotic and soporific effects from Miltown generally and in anxiety states. These findings have been confirmed by the present study. All patients who reported positive results described the following chief effects: lessening of tension, more complete relaxation, more prolonged and more restful sleep, and ability to feel at ease in groups and when speaking before groups, as well as in the presence of authoritarian figures. Thus, Miltown may be regarded as having not only sedative, hypnotic, and soporific qualities but also muscle-relaxing qualities that are of equal importance in alleviating the distressing symptoms of anxiety without (after a few days' use) the associated symptoms of dizziness and grogginess common to the usual sedative preparations and without the stimulating effect of most sedative-hypnotics. The findings of anticonvulsant activity experimentally points up the need for further investigation of the use of this medicament in petit mal and grand mal epilepsy. Likewise, its use as a muscle relaxant may offer some promise in paralysis agitans, both alone and in conjunction with other preparations. In the case mentioned in this study, Miltown was used as an adjunct to trihexyphenidyl hydrochloride and permitted the use of smaller amounts of the latter.

In view of the nature of its reaction on the body—that is, sedative, hypnotic, and muscle relaxing—it is suggested that perhaps the major relaxant effect may be primarily in the hypothalamus. While this is of course theoretical, on the basis of clinical observation, a site of action here would most nearly fit the reported results. The effectiveness of Miltown in anxiety and tension states is very encouraging and emphasizes its value as an adjunct to psychotherapy. As an additional measure of control, all of these patients had received mephenesin for a two week period before they received Miltown. In each case, they had either failed to respond to mephenesin or felt only a very slight effect from it; hence, for clinical and practical purposes, Miltown proved more effective than mephenesin in offering relief for anxiety and tension states. Also, the lack of toxicity, in amounts up to six 400 mg. tablets daily, further adds to its usefulness. One added factor relating to toxicity may be mentioned, even though no serious toxic effects were observed. The antagonistic action of this preparation to pentylenetetrazole-produced convulsions suggests pentylenetetrazole as a possible counteractant or therapeutic adjunct in the event of an accidental or deliberate (suicidal) overdosage.

SUMMARY AND CONCLUSIONS

Miltown (2-methyl-2-*n*-propyl-1,3-propanediol dicarbamate) proved most effective in anxiety and tension states through a lessening of tension, reduced irritability and restlessness, more restful sleep, and generalized muscle relaxation. It appeared to be less effective in psychoses, although it may be of value, and is certainly worth a trial in ambulatory schizophrenics. It also offers promise for further investigation in such diseases as epilepsy and paralysis agitans. In 68% of all the cases studied and in 78% of the anxiety states, there were favorable results in terms of relief of symptoms and a return to social productivity. The absence of toxicity, both subjectively and objectively, is an important feature in favor of Miltown. In addition, there were no withdrawal phenomena noted on cessation of therapy, whether it was withdrawn rapidly or slowly.

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Ichthyosarcotoxism.—Poisonous fishes, which are endemic to all warm seas, constitute a serious hazard. . . . Numerous outbreaks of intoxication and deaths . . . have been reported. Ichthyosarcotoxism . . . appear[s] to vary in severity, types of symptoms, and species of fish. The disease can be defined as a type of intoxication resulting from the ingestion of a neurotoxin which is present in the bodies of certain fishes, and variously manifested by symptoms of extreme weakness, malaise, pruritus, myalgia, paresthesias of the mouth and extremities, paralyses, and convulsions, generally associated with such gastrointestinal symptoms as nausea, vomiting, diarrhea, and abdominal pain. Death, when it occurs, is from respiratory paralysis. The treatment is symptomatic. A poisonous fish cannot be recognized by its appearance. The public health . . . significance of this disease is grossly underestimated and is worthy of much greater attention than it has received.—B. W. Halstead, M.D., and W. M. Lively Jr., M.D., Poisonous Fishes and Ichthyosarcotoxism, *United States Armed Forces Medical Journal*, February, 1954.

DIAGNOSIS AND TREATMENT OF IDIOPATHIC FACIAL PARALYSIS (BELL'S PALSY)

Fred B. Moor, M.D., Los Angeles

Idiopathic facial paralysis was first described by Sir Charles Bell in 1821.[1] Bell's original series of cases, however, was not made up exclusively of the idiopathic type of paralysis. Bell's palsy, or idiopathic facial paralysis, is understood to be a paralysis of sudden, usually unexplained, onset with or without pain. The involved side of the face is immobile, smooth, and expressionless. The duration of the disease varies from two weeks to six months, depending on the extent of damage that has occurred in the seventh nerve. The prospect for complete recovery is good in 80 to 90% of cases.

ETIOLOGY AND PATHOLOGY

Park and Watkins[2] in a study of 517 cases of facial paralysis from all causes at the Massachusetts General Hospital found that 87.2% were of the idiopathic type. The condition was more frequent in women than in men by a ratio of 9 to 7. The exact cause of Bell's palsy is unknown. In many cases there is a history of local chilling preceding the onset of the paralysis. The majority of interested medical men consider local chilling to be a frequent causative factor. In Park and Watkin's series, among the 398 patients with idiopathic facial paralysis, there were 42 with a history of chilling; in only one instance did the authors feel that the exposure was of significance in the cause. In some cases there is a history of upper respiratory infection. One can theorize that local chilling causes a primary vasoconstriction with ischemia of the nerve and its sheath followed by a reactionary phase in which there is vasodilatation resulting in edema and pressure on the nerve. Some have suggested that idiopathic facial paralysis may be caused by a virus. Skinner[3] thinks it is due to local vasospasm.

From the pathological standpoint, observations have been made in the operating room; very few cases have come to autopsy. Duel and Ballance[4] observed edema of the nerve at the time of doing neurolysis and concluded that the paralysis was due to ischemia caused by pressure. The studies of Kettel,[5] Hall,[6] Lewis, Pickering, and Rothschild,[7] and Denny-Brown[8] confirm this concept. When pressure is prolonged and severe, ischemic necrosis occurs in the compressed segment and peripheral Wallerian degeneration results.

DIAGNOSIS

In the typical case of idiopathic facial paralysis, diagnosis is usually easy. The history, physical examination, and electrical testing are important features of the diagnostic study. There may be an occasional case in which the help of the neurologist and/or the otolaryngologist should be sought. The most familiar electrical test is for loss of faradic sensitivity; some doubt the reliability of this test. Simple chronaxy testing and the plotting of the intensity-duration curve are helpful procedures. I have depended usually on the simple chronaxy test repeated at intervals to observe the progress of the case. A chronaxy value of 1 sigma or less is considered normal.

Electromyography, if carefully done, is a valuable diagnostic and prognostic procedure but is not generally available. Electromyographic study of the delicate muscles of the face is more painful, difficult, and time consuming than study of larger muscles elsewhere. Martin[9] remarked that electromyography in seventh nerve paralysis is as good as the neurologist who performs and interprets it. Some even doubt its value. Although I have electromyography available, I seldom use it, chiefly because of the added expense for the patient.

PROGNOSIS

The prognosis in Bell's palsy depends upon the severity of the lesion and the manner of treatment. The severity of the lesion is best determined by electrical testing, as indicated many years ago by Erb.[9a] If the electrical tests, such as faradic sensitivity, chronaxy determination, and/or electromyography show only a mild degree of damage, early recovery may be expected. If reaction of degeneration is present, recovery will be a matter of months. Bierman[10] has shown that early intensive treatment of Bell's palsy does shorten the course of the disease and improve the prognosis. Recent developments in the use of cortisone, stellate ganglion block, and the intravenous use of histamine have also improved the immediate prognosis in Bell's palsy. It has been estimated that 10 to 20% of patients suffering from Bell's palsy fail to recover with conservative treatment. Judging by Bierman's excellent results, this figure is much higher than it should be, provided patients are adequately treated. For those patients who do not respond to conservative treatment, surgical decompression of the seventh nerve is advocated.

TREATMENT

In my experience, patients suffering from Bell's palsy frequently are not seen until reaction of degeneration is already present. When the patient is seen early, i. e.,

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Read before the Section on Physical Medicine and Rehabilitation at the 103rd Annual Meeting of the American Medical Association, San Francisco, June 24, 1954.

1. Bell, C.: On the Nerves: Giving an Account of Some Experiments on Their Structure and Functions, Which Leads to a New Arrangement of the Systems, Phil. Tr., Lond. 2: 298, 1821.

2. Park, H. W., and Watkins, A. L.: Facial Paralysis: Analysis of 500 Cases, Arch. Phys. Med. 20: 749 (Dec.) 1949.

3. Skinner, D. A.: Histamine in Bell's Palsy, Tr. Am. Acad. Ophth. 56: 283 (March-April) 1952.

4. Duel, A. B.: Clinical Experiences in the Surgical Treatment of Facial Palsy by Autoplastic Nerve Grafts: Ballance-Duel Method, Arch. Otolaryng. 16: 767 (Dec.) 1932.

5. Kettel, K.: Bell's Palsy: Pathology and Surgery: Report Concerning 50 Patients Who Were Operated on After Method of Ballance and Duel, Arch. Otolaryng. 46: 427 (Oct.) 1947.

6. Hall, A.: Pathology of Bell's Palsy, A. M. A. Arch. Otolaryng. 54: 475 (Nov.) 1951.

7. Lewis, T.; Pickering, G. W., and Rothschild, P.: Centripetal Paralysis Arising out of Arrested Bloodflow to the Limb, Including Notes on a Form of Tingling, Heart 16: 1 (Oct.) 1931.

8. Denny-Brown, D., and Brenner, C.: Paralysis of Nerve Induced by Direct Pressure and by Tourniquet, Arch. Neurol. & Psychiat. 51: 1 (Jan.) 1944.

9. Martin, R. C.: Symposium on Facial Paralysis: Bell's Palsy, A. M. A. Arch. Otolaryng. 55: 405 (April) 1952.

9a. Erb, W. H.: Hand-Book of Electro-Therapeutics, translated by L. Putzel, New York, William Wood & Company, 1883, pp. 39-84.

10. Bierman, W.: Diagnosis and Treatment of Bell's Palsy, J. A. M. A. 149: 253 (May 17) 1952.

during the first two weeks, however, vigorous treatment should be instituted. Bierman[10] demonstrated that intensive daily physical therapy for the first 2 weeks, followed by treatment three times weekly, resulted in a 69% recovery rate in 4 weeks and a 90% recovery rate in 12 weeks. When physical therapy was given three times weekly for the first two weeks and three times weekly thereafter, the four-week recovery rate was only 38% and the 12-week recovery rate was only 72%. In 26 weeks, the recovery rate was 92%, approximating the figure of 90% accomplished by the more intensive treatment in 12 weeks. From these figures, the importance of intensive early treatment is clear. Except in the matter of frequency of treatment, the management of early and late cases of Bell's palsy is essentially the same. Bierman,[10] however, uses the static brush discharge in his early cases. The procedures employed in the physical therapy of Bell's palsy are: (1) local heat, (2) electrical stimulation, (3) massage, (4) exercise, and (5) splinting of the face.

Local Heat.—The purpose of local heat in the treatment of Bell's palsy is mainly to prepare the facial muscles for electrical stimulation and massage. A convenient form of heat for this purpose is infrared radiation. The lamp should be placed at a comfortable distance for about 15 to 20 minutes. Another satisfactory form of heat is the warm moist pack or fomentation.

Electrical Stimulation.—Heat is followed immediately by electrical stimulation. Since denervated muscle requires a stimulus at least as long as its predetermined chronaxy value, a stimulus of sufficiently long duration must be employed. If the muscle is denervated, it will not respond to faradic stimulation. The simplest effective stimulating current for denervated muscle is the interrupted direct current, which I use in my work. Any electrical stimulus, however, of sufficiently long duration may be used. Solandt, DeLury, and Hunter,[11] found the 25 cycle alternating current to be the most effective for prevention of atrophy in denervated muscle.

It has been shown by Kosman, Osborne and Ivy [12] that frequent and vigorous stimulation is necessary to obtain optimal results in the maintenance of the weight and strength of denervated muscle. Three periods of brief vigorous stimulation daily were found to be best by these authors; more frequent stimulation than this did not improve results. I therefore stimulate as frequently as possible and to the limit of the patient's tolerance. Pain is the only contraindication. Since it is usually not possible for patients to come to the clinic daily, I frequently have them obtain direct current equipment and do their own stimulation three times daily at home. Frequency of treatment is more important than duration. In their experimental work on rats, Kosman, Osborne, and Ivy used 30 second periods of stimulation. Two to five minutes is a suitable duration of stimulation in the human patient.

Massage.—I believe that massage is of definite value in conjunction with other physical measures in the treatment of Bell's palsy. It has been shown by Suskind and others [13] to help maintain muscle strength but not muscle mass. In facial paralysis, care must be used not to increase the facial sagging by massage. The chief movement is gentle pétrissage or kneading and is directed against gravity and the pull of contralateral muscles. Some recommend that the massage of the lower facial muscles be done with one finger inside the mouth. The patient may be taught to do this himself.

Exercise.—Bierman,[10] and Pickerill and Pickerill,[14] as described below, recommend that an attempt be made to immobilize the face during the course of Bell's palsy. When voluntary motion appears, I have encouraged patients to exercise the facial muscles, endeavoring to confine movement to the involved side of the face. Exercise may be done before a mirror. I have observed no deleterious effects from this program. It is assumed, of course, that the exercise is carried out under the direction of a qualified physical therapist. The preceding heat, massage, and electrical stimulation have been aimed at keeping the muscle in the best possible condition for the time when recovery of nerve function occurs and voluntary movement begins.

Splinting.—Opinions appear to differ as to the value of splinting of the face in Bell's palsy. I have not routinely splinted the face in this disease. The old splint, which hooks in the corner of the mouth and passes around the ear, is thought by some to be of little value. Pickerill and Pickerill [14] have recommended adhesive strapping, which aims to support the lower eyelid and to prevent stretching of the paralyzed muscles by gravity and by the pull of the contralateral muscles. Others have found that adhesive strapping is poorly tolerated by the average patient. Allen and Northfield [15] recommend an intraoral splint made of clear plastic that anchors the sagging angle of the mouth to the teeth or, in case the patient is edentulous, to an upper plate. The splint supports the corner of the mouth and prevents stretching of the paralyzed muscles by the contralateral muscles. This is undoubtedly the best method of splinting the face but requires the services of a dentist or technician to prepare the splint. Whether the face is splinted or not, the eye should be protected by a patch, by goggles, or even by suturing the lids, if necessary.

COMMENT

The present outlook for the patient with facial paralysis is encouraging, provided he seeks treatment early and is treated intensively. This statement applies whether the treatment be by physical therapy or by medicinal means. It is now evident that complete recovery of function can be restored even in severe cases if therapy can be started within a few hours or days of onset and carried out with daily treatment during the first two or three weeks of observation. A delay in starting an intensive treatment program is likely to prolong by months the duration of the paralysis. Some persons maintain that the value of physical therapy in the treatment of Bell's palsy is chiefly as a

11. Soldant, D. Y.; DeLury, D. B., and Hunter, J.: Effect of Electrical Stimulation on Atrophy of Denervated Skeletal Muscle, Arch. Neurol. & Psychiat. 49: 802 (June) 1943.

12. Kosman, A. J.; Osborne, S. L., and Ivy, A. C.: Influence of Duration and Frequency of Treatment in Electrical Stimulation of Paralyzed Muscle, Arch. Phys. Med. 28: 12 (Jan.) 1947.

13. Suskind, M. I.; Hajek, N. M., and Hines, H. M.: Effects of Massage on Denervated Skeletal Muscle, Arch. Phys. Med. 27: 133 (March) 1946.

14. Pickerill, H. P., and Pickerill, C. M.: Early Treatment of Bell's Palsy, Brit. M. J. 2: 457 (Oct. 6) 1945.

15. Allen, A. G., and Northfield, D. W. C.: Intra-Oral Splint for Facial Palsy, Lancet 2: 172 (Aug. 5) 1944.

morale builder. It is a morale builder certainly, but the evidence is that it is more than this. I do not claim that the physical therapy program will hasten nerve regeneration, when this becomes necessary, but it will maintain the muscles in better condition pending the time when reinnervation occurs.

SUMMARY AND CONCLUSIONS

The exact cause of idiopathic facial paralysis (Bell's palsy) is not known, but ischemia caused by edema of the nerve and its sheath within the unyielding bony canal has been shown to occur. The diagnosis of Bell's palsy is usually not difficult and depends on the history, physical examination, and electrical testing. Physical therapy should be started early and intensively to insure rapid and complete recovery. The physical therapy program consists of local heat, electrical stimulation, gentle massage, carefully controlled exercise, and splinting of the face. The prognosis in Bell's palsy depends on early and intensive treatment before irreversible damage has been done to the seventh nerve and complete regeneration of the peripheral segment becomes necessary.

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THE PHYSICIAN AND THE MEDICAL LIBRARY

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and
Estelle Brodman, Ph.D., Washington, D. C.

It is highly possible that medicine could be practiced today without the aid of any medical literature other than that in THE JOURNAL.[1] However, for a really high level of practice, advances in the field must be followed through many books and journals, and advice on puzzling cases and unusual diseases must be sought for in print. For all of these a medical library, like a spare tire on a car, is very comforting to have around, even though it is used only occasionally; like that spare tire, the medical library, when needed, is needed immediately. The physician, therefore, might well be concerned with the status of his local medical library.

PRESENT STATUS OF MEDICAL LIBRARIES

The number of medical libraries now in existence in the United States is not definitely known, but some 400 such libraries are members of the Medical Library Association, a professional organization international in scope but predominantly American in character. This association has set certain standards for membership. A collection of 1,000 or more medical and allied books must be maintained, of which at least 500 must have been published in the preceding 10 years. There must be regular receipt of a minimum of 25 journals appropriate to the institution. Regular hours for keeping the library open are mandatory, and a regular attendant must be in charge. In addition to the Medical Library Association, the American Medical Association [2] and the American College of Surgeons [3] have also promulgated standards for medical libraries. The American Dental Association [4] and the National League of Nursing Education [5] have developed standards for libraries in their fields, especially in hospitals that have been approved by them for training. The American Medical Association, the American College of Surgeons,[6] the National League of Nursing Education,[7] and the Veterans Administration [8] have published lists of books and journals useful to such libraries. The American College of Surgeons has also added hints on the administration of the collection.[9] In the military field, the Office of the Surgeon General, U. S. Army, has long had a board that regularly reviews and publishes lists of officially "approved" medical books and journals.[10] Another very useful tool is the "Handbook of Medical Library Practice," [11] now out of date, but with a new edition scheduled for publication.

Although all these groups have set up guides and minimum standards, the size of medical libraries in the United States varies enormously from collections of a few hundred out-of-date volumes and broken runs of a few journals to such mammoth collections as the Armed Forces Medical Library, with its stock of close to one million books and its receipt of over 4,000 periodicals. The majority of American medical libraries however, contain between 20,000 and 40,000 volumes, receive about 200 magazines regularly, spend about $800 annually for books, and have one or two professional librarians and a clerical assistant on their staffs. The kind and quality of the services rendered by medical libraries, like their size, vary enormously. Part of this variation is due to the needs of the users of the particular library, part to budgetary considerations, and part to the knowledge and ability of the librarian.

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1. Flaxman, N.: How to Keep up with Medical Literature, J. A. M. A. 154: 1409-1410 (April 24) 1954.

2. Hospital Medical Library Suggestions, Chicago, Council on Medical Education and Hospitals, American Medical Association, 1951.

3. Manual of Hospital Standardization, Chicago, American College of Surgeons, 1946, pp. 72-73.

4. The Dental Library, Council on Dental Education, American Dental Society. J. Am. Coll. Dent. 12: 202, 1945.

5. Essentials of a Good School of Nursing, New York, Education Committee on Standards, National League of Nursing Education, 1952, pp. 55-57.

6. The Hospital Medical Library, Chicago, Department of Literary Research, American College of Surgeons, 1947.

7. Manual for the Nursing School Library, New York, Committee on the Nursing School Library, National League of Nursing Education, 1947; Guide for the Development of Libraries in Schools of Nursing, New York, National League of Nursing Education, 1952.

8. Basic List of Medical Books and Journals for VA Hospitals, Centers, and Domiciliaries, October 1952, rev., Special Services, Library Services, Veterans Administration, 1952.

9. Prime, L. M.: The Hospital Library and Its Administration, Bull. Med. Lib. A. 28: 81-90, 1939-1940.

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11. Medical Library Association: Handbook of Medical Library Practice, Doe, J., editor, Chicago, American Library Association, 1943.

LIBRARY USERS

Every physician uses at least one medical library—his own. At the least, this consists of files of THE JOURNAL and the state medical journal, which the physician receives because he is a member of these societies, and of the books he acquired in his medical school courses, plus a few he has purchased since graduation. It may be much more extensive than this. It probably contains some promotional material put out by pharmaceutical houses, some of which is of very high quality. In the United States the physician usually has access to the library of his own county medical society or to a small hospital library; even though he does not live in the particular city where the hospital or medical society is, he probably makes occasional use of these libraries. At the worst, if there is no local medical library, the American physician can call upon the services of certain "mail order" libraries, such as the state medical library, the package libraries of the American Medical Association and American College of Surgeons, and the Armed Forces Medical Library, all of which are very efficient. Moreover, once he is in touch with any medical library in the United States, the physician, through the interlibrary chain, can obtain almost anything he needs from practically any other collection in the chain.

The general practitioner is likely to consider his own library as the basis of his graduate education and to use it as the source of information for new diagnostic and therapeutic aids and for reference in puzzling cases when, for one reason or another, he is unprepared to seek help elsewhere. On the other hand, the clinical or laboratory research worker is less of a "lone wolf." He is usually connected with a hospital—otherwise he would be without the necessary facilities for his research—and there is almost sure to be a library available to him in the hospital. Frequently he is even a member of the hospital library committee and concerns himself with choosing the librarian, noting how the library works, and helping improve it by suggesting new accessions, a larger budget, or larger quarters. Such a research worker uses the medical library to determine what has been published on a problem on which he is engaged and to gain support or discouragement for what he considers a "new" idea. In addition to the literature used by the general practitioner, the research worker is likely to be interested in the specialty journals and the specialized monographs in his field. He is usually a member of such specialized societies as the American Association of Chest Surgeons, and from these he receives publications, some of which he may deposit in the hospital library after he has read them. The physician working in a medical center or a teaching institution is the most fortunate so far as library facilities are concerned, for almost all centers have good medical collections presided over by comparatively large staffs of librarians. It should be pointed out, however, that these medical center libraries differ from good hospital libraries only in the quantity, not in the quality, of the literature they make available.

KINDS OF LIBRARIES

Based on this diversity of use, several kinds of libraries have come into being, each responding to a definite need. As far as can be determined, it appears that the earliest medical libraries in many local communities grew out of the pooling of books and the exchanging of journals among a small group of physicians associated together for one reason or another. The present growth of group practice clinics in various parts of the country also shows a repetition of this pattern. As the group grew, provision had to be made for space in the clinic or in the society building for a repository for the pooled books and journals; usually some kind of custodian was appointed to look after the collection and to see that the material was received regularly, the journals were bound, and the bills were paid.

Both the small hospital library and the medical society library, with their more formal setup, have sprung from this basic development. They have usually come into existence because the members of the hospital staff or the physicians in the community, realizing their need for ready access to the literature, attempted to do what they could with the limited resources and time available during an active practice. Such local libraries almost invariably carry much dead wood in the form of gifts from widows and children of physicians, and, since there is usually no one with time and knowledge to go through these gifts and salvage the worth-while items (usually of a historical nature or in a specialized field), the small hospital or society library frequently contains many outdated textbooks and broken files of standard journals.

As the size of the community grows, the number of physicians increases, so that the library collection must become larger to satisfy the demands placed on it. The library staff then enlarges and the library becomes more complex to administer and to use. Such libraries as those attached to the Mayo Clinic or the Massachusetts General Hospital show the size that hospital libraries can attain, while the library of the New York Academy of Medicine, the Boston Medical Library, and the library of the College of Physicians of Philadelphia are examples of large and complicated medical society collections housed in huge buildings and employing many librarians.

CHOICE OF THE COLLECTION

The most important part of any medical library is its stock. With a well-chosen collection of books, journals, and indexes to the literature, the library will be of use to anyone truly seeking information. Of course, the ease with which it can be used and the helpfulness of the library staff are also important. Hospital libraries, to be most useful to their readers, might well contain as large a number as the budget will allow of the specialty journals that provide information not obtainable in the state and national journals customarily subscribed to by the general practitioner, as well as such periodicals as the *Medical Clinics of North America* or the *American Journal of Medicine*, whose primary purpose is to offer postgraduate refresher courses. The library committee and the librarian might well add to these the textbooks that have gained acceptance after being reviewed by competent authorities. For this purpose, a scanning of book reviews in such organs as THE JOURNAL is extremely helpful. The short delay in obtaining the book after publication, due to the time lag in reviewing, may not be as serious as spending money on journals of only limited usefulness. In many even quite small libraries, sets of

the standard loose-leaf systems, such as those of Nelson, Oxford, and Tice, are provided. If not kept up to date these are comparatively worthless, and even when they are scrupulously maintained their information is likely to be somewhat behind that of good journals and new texts; they do provide fine background material for the intern or resident, however, and for that reason should not be completely eliminated.

To the research worker, all the foregoing literature is helpful, but for his particular use the library might well add subscriptions to abstract journals, such as "Excerpta Medica," and to indexing organs, such as the Current List of Medical Literature or the Quarterly Cumulative Index Medicus. These tools would be helpful to all other library users, of course, but it is unlikely that they would be consulted as extensively by others as by the research worker. The abstract sections in such journals as THE JOURNAL and *Surgery, Gynecology and Obstetrics* give a limited but valuable span of the medical literature, especially when the annual indexes to them are received. It is regrettable that it is not often realized how many such tools are at hand in even a small collection.

Having collected the worth-while material in the library, the next problem is to arrange it in an easily usable manner. Journals probably should be arranged alphabetically. Books might best be collected together by subject groupings that reflect the specialties of medicine. Magazines that are bound regularly are most easily used. In this connection, the library staff should accept graciously, and even encourage, the donation of numbers of magazines to fill in gaps for binding. Whether the library is large or small and whether it consists of one large reading room or a number of smaller study rooms, it will serve the user's purpose satisfactorily if it is well lighted and reasonably quiet and if its books and magazines are readily accessible. The simpler the organization, the better, as a general rule.

SERVICES

The least a medical library can do is to see that its collection is available for use. This custodial care is often assigned to the executive officer of the society in charge, to a departmental secretary, or, in small hospitals or clinics, to an assistant in the office of the administrator; frequently, arrangements are made for the use of the collection by residents and interns at all hours of the day and night. As the collection grows, it acquires a full-time attendant, and the custodial function, while always present, sinks into comparative insignificance as other services are made available. Usually the earliest such service added is use by the librarian of the next larger source in the chain of libraries. As a result the library becomes the local clearing house for obtaining material not in its own collection. Such material may be obtained on interlibrary loan from nearby libraries; from the American Medical Association, which will also lend journals to the individual physician; from state library collections; or from the Armed Forces Medical Library in Washington. For those who desire to retain the material, the medical librarian will frequently request reprints from authors or arrange for microfilm or photoprint copies.

As the medical librarian grows more proficient and as the library committee gives advice and support, other services may be added. New acquisitions are made regularly and are called to the attention of the staff, either by formal listing in the local news sources or on bulletin boards, by pasting reviews of the book in each new accession, or by individual messages to staff members regarding books or journal articles in their particular specialties. A librarian who shares knowledge of methods of locating literature on specific subjects with the medical staff, especially in such sister services as *Chemical Abstracts* or *Biological Abstracts*, adds still another service to those already mentioned. It is a moot question whether the library should ever offer indexing and abstracting services. Unless the librarian is especially trained in this field and unless there is enough staff to take care of more fundamental library needs, it is perhaps better that this be an extracurricular activity of the medical library and be paid for as such. This is also true of the compiling of bibliographies and reviews of the literature. Moreover, it is usually so difficult to represent accurately in brief form what the author of a piece of medical writing has in mind that it is usually wiser for the physician to examine and evaluate the writings himself than to ask someone else to do it for him.

TRAINING OF MEDICAL LIBRARIANS

To accomplish all this, most medical librarians are trained both academically, in colleges and in schools for librarians, and through on-the-job internships. At present there are more than 25 schools of librarianship in the United States, each requiring a college degree for entrance. Many students who expect to work in medical libraries obtain some academic scientific background before entering library school; unfortunately, however, not all have this desirable background. Here is where the local physician, in his capacity as family counselor, may well help by suggesting medical librarianship to college students interested in science but not in reasearch or laboratory work. Another prerequisite for good work, for a medical librarian, is a knowledge of foreign languages; for while it may be true that at present a large portion of medical research is reported in English, there is still a sizable amount in other languages. The past literature, on which the present is based, contains perhaps 80 to 90% of foreign material; therefore, the more German, French, Italian, and Russian a medical librarian can understand, the more valuable he or she will be.

The Medical Library Association has set up a voluntary certification program that will aid persons responsible for selecting medical librarians. This program of certification calls for college and library school training, with a special course in medical librarianship, a course now given at Columbia University in New York, at Emory University in Emory, Ga., and at the University of Southern California in Los Angeles. Scholarships for these courses are also provided by the association. Naturally, the more skilled and better trained the librarian, the better will be the library; it is, therefore, to the advantage of all concerned for the library committee to take responsibility for the selection and training of medical librarians.

LIBRARY COMMITTEES

Most medical libraries are aided by a board or committee of from three to seven persons appointed by the dean of the medical school, the hospital administrator, the

director of research, or some other competent authority. The librarian is usually a member of the committee. Occasionally he is the chairman, but more often he is the committee's secretary. The board exists to give advice and help to the librarian and to act as liaison between the library and the institution. It usually makes over-all policy decisions about the administration of the library but leaves the actual running of the library to the librarian. It commonly chooses the chief librarian, draws up the budget, allots the funds, prescribes the hours of opening, and determines the kind and amount of service to be offered; frequently it also aids in the selection of the book and journal stock. Subcommittees may be set up for specific purposes, such as planning for new quarters. The chairman of the full committee is usually consulted more than any other member, and his real interest will often determine just how far the library advances.

The physician is the *raison d'être* of the medical library. His writings constitute its stock-in-trade. His needs and use dictate its content and services. The library will be only as good as he helps to make it, and, unless he is willing to support it in time, thought, and money, it may not be in a position to support him when he needs it.

APO 438, San Francisco (Colonel Pulaski).

FREEDOM AND PROGRESS IN MID-TWENTIETH CENTURY MEDICAL EDUCATION AND RESEARCH

OPPORTUNITY AND RESPONSIBILITY IN NEUROLOGY

Henry W. Woltman, M.D., Rochester, Minn.

This is a happy occasion, for this group is assembled to dedicate the Mayo Memorial Building, a gift cheerfully bestowed by the people of Minnesota and an investment confidently made by the state government. Also, the mid-20th century has been reached, thus far the high tide of scientific achievement. At the same time, this is a solemn occasion, for a dedication engenders somber reflections, and mankind is living in a time of crisis. But, reflection is the mother of wisdom, and Kohn [1] wrote, "The historian knows that throughout most of history men have lived in critical times," that "perspective may help . . . in regarding the present as not too bad and in expecting not too much from the future."

A THING OF THE HUMAN SPIRIT

But it is not so much a building that is being dedicated as it is what Dean Theodore Blegen called "a thing of the human spirit." And what, one may ask, is this "thing of the human spirit?" The men in whose shadow this building was reared set unto themselves a task that was impossible. As Osler [2] wrote, somewhere "on the 'Prairies,' about 1000 [sic] miles north-west of Chicago . . . two young Irish-Americans called Mayo" would give to the ill the best that medicine could offer; they would learn what lies beyond the horizon; they would give to young physicians of promise the opportunity to pursue the study of medicine according to the principle, "guidance without pampering; help without meddling." [3] and they would imbue them with the tradition of medicine, thereby adding to their scientific education a moral philosophy. Soon after President George Edgar Vincent came to the university in 1911, he could report that in this prairie town there had been established a graduate school with 36 fellows in training that was as good as any. On Sept. 17, 1917, articles making permanent the affiliation of the Mayo Foundation for Medical Education and Research with the University of Minnesota were signed. Patients were getting good care, and by midcentury more than 2,500 fellows had received graduate training through the foundation. William James Mayo had said rightly, "I have done the thing in life that I have wanted to do." [4]

HERE IS AN OPPORTUNITY: WHAT YOU MAKE OF IT IS YOUR RESPONSIBILITY

Meanwhile the University of Minnesota, too, was in ferment. For years every good medical school had been giving unsystematized postgraduate work in the clinical branches, but the pattern of clinical training at a true university graduate level, it is now known, was set by what has been called the "Minnesota experiment." Pioneers of this experiment included such men as George Edgar Vincent, William James Mayo, Guy Stanton Ford, Elias Potter Lyon, and Louis Blanchard Wilson. The elements of this experiment were enumerated by Dean Lyon [5] in the following almost self-evident propositions: that the important facts of medical science had become too complex and numerous for one man to master; that systematic graduate training in clinical specialties and in the underlying sciences was a necessity; that safeguarding of the public demanded some method of certification of specialists and the conferring of a moral, if not a legal, right of the specialist to work independently; that progress in medicine was of the utmost importance to civilization, to human need, and to the profession of medicine; that the leaders of medicine, as exemplified by the class of specialists, should be more than practitioners, they should be scientists; that leadership in the profession should rest on productive scholarship; and that each of these propositions involved a task appropriate to a university.

From the Section of Neurology, Mayo Clinic and Mayo Foundation.

Read at the dedication of the Mayo Memorial Building, University of Minnesota, Minneapolis, Minn., Oct. 21, 1954.

The Mayo Foundation is a part of the Graduate School of the University of Minnesota.

1. Kohn, H.: A Historian's Creed for Our Time, Am. A. Univ. Professors Bull. 39: 608-615, 1953-1954.
2. Osler, W.: Remarks on the Medical Library in Post-Graduate Work, Brit. M. J. 2: 925-928 (Oct. 2) 1909.
3. Hewitt, R. M., quoted by Clapesattle, H. B.: The Doctors Mayo, Minneapolis, the University of Minnesota Press, 1941, pp. 712, 799.
4. Clapesattle, H. B.: The Doctors Mayo, Minneapolis, the University of Minnesota Press, 1941.
5. Lyon, E. P.: Graduate Education in the Clinical Branches, and the Minnesota Experiment, J. A. M. A. 69: 1307-1313 (Oct. 20) 1917.

In the academic year 1914-1915, the large task was undertaken "conservatively and gradually but nevertheless without delay" [5] to systematize such work and give it a "local habitation and a name." These objects were to be attained by establishing, for the first time in the history of a clinical science, teaching fellowships that called for the successful meeting of requirements corresponding to those of other graduate schools and thereafter the granting of earned degrees. This historic experiment was followed with an interest of which I was not then aware. Since it was my privilege to be among the first group of 11 vertebrates used in this experiment, I should like to give you the subject's point of view. A provision of the utmost importance had not escaped the men who were named a moment ago. They combined their plan of education with a full-time, small-salaried, temporary clinical assistantship, a fruitful idea that had been adopted by the University of Michigan. This small but essential salary ranged from $500 for the first year to $1,000 for the third. We assistants did some teaching, but I must confess that we were grossly overpaid. There was in the position nevertheless something substantial that was made clear to us by Dean Ford: "Here is a laboratory and here are the keys to the building; here are patients and here is a library; here is the staff, get their advice and educate yourself; in short, here is an opportunity; what you make of it is your responsibility."

The Minnesota experiment represented the birth of a great idea. The immediate result was not exactly such as would have provoked Disraeli to remark, as he did of Gladstone's wife, "There goes a woman without one redeeming fault." The rugged contours of the earlier days of this experiment have all but disappeared, and the graduate student of the mid-20th century encounters scarcely any trace of them. His greatest loss had been our greatest inspiration. Chiseled over the doorway of the Alexandrian library was a message that has lived on: "A good book is the precious life blood of a master spirit embalmed and treasured up on purpose to a life beyond life." All but one of the bold draftsmen of the Minnesota experiment are gone, but to the graduate medical student they bequeathed a maxim: "Here is an opportunity, what you make of it is your responsibility."

PROGRESS IN TEACHING

With the passing years came many changes in graduate medical education and its reciprocal relationships to specialty practice, but I shall continue to speak only of those with which I am best acquainted, namely, those related to neurology. Influences outside the universities also made themselves felt. In 1934, the American Board of Psychiatry and Neurology, Inc., was formed, and it, rather than the universities, determined the fitness of a physician to practice this specialty. Therefore, preparation to surmount the many obstacles that the aspirant might encounter became of vital concern to him. Instructors came to his rescue, and the former concentration of effort in some field of the student's choice gradually gave way to a scattering of effort. For him the day of freedom was put off once more. But teaching improved, and the result was good. Since some students are heedlessly curious and many teachers inspiring, the result was also refreshingly varied. And here one discovers that Dean Lyon, in stating that the conferring of a moral, if not a legal, right of the specialist to work independently involved a task appropriate to a university, drew an exceedingly penetrating distinction.

With World War II (1939-1945) came the need for specialists of all kinds. Time was precious and undergraduate techniques, less costly in time, displaced what remained of the privilege and responsibility to hack one's own way through the forest. The student emerged much better informed than had his predecessor. However, a subtle change had taken place. While educators of the graduate school, as has been seen, had placed responsibility on the student, the student now placed responsibility on the teacher. Student polls bear this out. The instructor became keenly aware of his responsibility; the student, not always. But by midcentury another shift was apparent, and now both share responsibility equally.

The problem of assimilating and passing on to the next generation the pyramiding discoveries of an accelerated science had to be faced with courage, and now it is generally agreed that lengthening the curriculum is not the solution. Now minutiae are considered to be primarily the concern of the researcher; broad considerations, however difficult their formulation may be, are more especially the province of the teacher.[6] Harlow Shapley's [7] essay entitled "Cosmography: An Approach to Orientation," although it deals with a very different theme, is a sensitive presentation of what appear to be the basic entities of the universe: space, time, matter, and energy—a large subject indeed. Here the very scope of the inquiry adds force and clarity to the presentation. A closely related problem is how to survey the flood that comes from the presses. Time and again Osler [5] spoke of what and how to read, and, already in 1909, he also warned against reading too much.

And now perhaps one may consider briefly a greatly neglected instrumentality of research. This is communication. Although a moral obligation is involved, the investigator sometimes does not go to the trouble to make himself understood. Were it to receive the attention it deserves, communication would indeed rank as importantly as does a basic medical science. It is therefore pleasing to note that, this year, four-year courses in medical journalism, as conceived by Hewitt,[8] were instituted in three Midwestern universities. The cataloguing of ascertained facts is germane. Handbooks, such as those used so widely in physics, chemistry, and engineering, and even more elaborate devices, have been advocated. They help to remove essential facts from the realm of the unindexed, and they serve as readily accessible repositories. Vannevar Bush [9] chose a meaningful title, "We are in Danger of Building a Tower of Babel," under which to speak of this problem, and Ralph Gerard is doing something about it in his field.

6. Report of the First Teaching Institute, Association of American Medical Colleges, Atlantic City, Oct. 19-23, 1953, J. M. Educ. 29: 3-196 (July, pt. 2) 1954.

7. Shapley, H.: Cosmography: An Approach to Orientation, Am. Scientist 42: 471-486 (July) 1954.

8. Hewitt, R. M.: 1953 Report of the Educational Committee, American Medical Writers' Association, Mississippi Valley M. J. 76: 3-6 (Jan.) 1954.

9. Bush, V.: We Are in Danger of Building a Tower of Babel, Pub. Health Rep. 68: 149-152 (Feb.) 1953.

CLINICAL MEDICINE THEN AND NOW

An important area of study and research lies around the patient. During the first half of the 19th century, the fortunes of neurology fluctuated widely and, in some places and times, neurology almost became extinct. Although neurology has been called the "queen specialty of medicine," because of its close correlation with the sciences of anatomy and physiology, it was also regarded as a therapeutically hopeless field, and its practitioners were looked on as clinical epicures. But neurology never was in danger of complete extinction because it concerns too vital an area of medicine. Out of this vitality came the American Academy of Neurology, founded in 1949, under the able and inspiring leadership of A. B. Baker. During the past half century, striking changes have taken place in clinical neurology. Especially to be noted are the impressive progress in treatment, the advancements made by neurosurgeons, the withdrawal of psychiatrists from neurology, and the increasing interest and collaboration of workers in basic medical sciences. By midcentury the teacher of clinical neurology had found no substitute for study of the patient. Neurologists find diagnosis much more difficult than it was. Perhaps this is because patients come earlier for help and are not so ill when they meet the neurologist as they formerly were. Often, therefore, the only clue to the nature of a patient's illness is his story; the history of necessity has become more helpful than examination. It may almost be said that diseases have acquired personalities and that diagnosis has become a study of behavior.

Because of the progress in treatment already alluded to, diseases that were encountered almost daily at the start of the century have all but disappeared. Among these are tabes dorsalis, dementia paralytica, subacute combined degeneration of the spinal cord and other overt deficiency diseases, abscess of the brain, blindness and coincidental disappearance of headache caused by tumor of the brain, and death from meningitis. Mechanical causes, long suspected, of many of the neuritides have been uncovered and traced to their site. Through physical medicine many residua have been alleviated and other approaches, especially pharmacological and surgical, are being explored.

The important discovery that abnormal copper metabolism is related to hepatolenticular degeneration justifies the hope that other metabolic diseases may yield their secrets far in advance of the anticipated time. Studies in genetics have been rewarding; they suggest that hereditary and familial diseases may not be as hopeless as they were once thought to be. It still is necessary to guess vaguely regarding the nature of certain primary degenerative diseases: encephalopathies, myelopathies, neuropathies, and mycpathies. The possibility that tumors may synthesize growth hormones allows the neurologist to perceive dimly some approach to better treatment of malignant tumors of the nervous system. Of immediate concern are the circulatory and viral diseases. Much has been learned of the nature of consciousness and its disorders, and it can be expected that still more of the physiological basis of psychological processes will be learned. The special sensory organs and the behavior of impulses arising from them are being studied with renewed interest. It is well known that impulses in nerve fibers have effects on adjacent nerve fibers, and while these effects are not in the nature of initiation of impulses in normal adjacent nerve fibers, such effects have been known to be exerted on injured adjacent fibers. The possibility that effects such as have been described may take place also in the central nervous system deserves study; their occurrence in the central nervous system would allow a more satisfactory explanation of many phenomena observed in patients than now is possible.

Time does not permit even enumeration of the many new and promising techniques that workers in the basic sciences have adopted or devised. These techniques are broadening the horizon of knowledge day by day. A survey more extended in time would permit a view of the past, where may be uncovered some neglected treasures such as René Dubos identified.[10] In his delightful essay, "The Gold-Headed Cane in the Laboratory," he reminds one that the etiology of most human diseases is multifactorial, and a return to this broad approach commands attention. E. G. D. Murray,[11] looking into the future, cautions against a homocentric stand; "the living agents of disease," he says, "are still actively following the processes of evolution and anything may come of it. . . . For Man thinks this is his world, but the microbes don't know that." In this connection one has but to think of the ravages of epidemic encephalitis. And Murray gives yet another timely word of caution: "And so we must take thought to ourselves to devise it that the taint of man's world does not infect Nature beyond the limit of forbearance, lest we become known only by our bones. For the very nature of an extinct fossil is the perfect expression of a sorry failure."

POSTSCRIPT

When one at last surveys neurology's midcentury task, one finds it great, but one finds, also, the means, or plans, of doing it at hand. The ratio of experienced practicing neurologists to population has been estimated at 1 to 125,000, the incidence of neurological diseases as 12 to 14%[12] of patients, the ratio of deaths from disease of the nervous system to total deaths as at least 1 in 7.[13] In Minnesota, deaths caused by intracranial vascular lesions alone rank third (12.8%), exceeded only by cancer (16.4%) and by heart disease (36.6%).[14] Fortunately, a long overdue survey of the prevalence and distribution of neurological diseases is being undertaken by the United States Public Health Service, but this important study cannot be completed before 1960. Members of the American Neurological Association are aware of the implications of this survey. In 1952 they urged its earliest completion and asked all members to cooperate.

10. Dubos, R. J.: The Gold-Headed Cane in the Laboratory, Pub. Health Rep. **69**: 365-371 (April) 1954.

11. Murray, E. G. D.: The Place of Nature in Man's World, Am. Scientist **42**: 130-135, 142 (Jan.) 1954.

12. Wolff, H. G., and Dunning, H. S.: The Teaching of Clinical Neurology, J. A. Am. M. Coll. **22**: 263-273 (Sept.) 1947. Wolff, H. G.: Teaching of Neurology, ibid. **24**: 142-149 (May) 1949.

13. Deaths and Crude Death Rates for Each Cause, by Race and Sex: United States 1950, Vital Statistics—Special Reports: National Summaries, U. S. Public Health Service, Office of Vital Statistics **37**: 115-148 (Feb. 16) 1953.

14. Public Health: Investment Not Expenditure, Minnesota's Health **8**: 1 (July-Aug.) 1954.

The illnesses neurologists treat also take rank among the worst. All are distressing and often they disable for life. Their visitation lays on patient, family, and society a spiritual and financial blight. But, if anyone desires to take his measure in research, he will discover that many of the physical, chemical, and electric processes that are utilized by the nervous system still lie far beyond the range of his imagination. "It makes the study of mankind by man," as Vannevar Bush [9] so pertinently said of the nervous system, "the most challenging problem that man can conceive." With the need so great and the prospects so thrilling, one might well ask in words from Shakespeare's "Merchant of Venice" (Act 1, scene 1):

> How can a man, whose blood is warm within,
> Sit like his grandsire cut in alabaster?

The answer is, he cannot. And the people of the United States want something done about it. They have made themselves vocal through the organization of societies for the study of neurological diseases, and, in August, 1950, the Congress of the United States authorized establishment of the National Institute of Neurological Diseases and Blindness, adding work in these fields to the responsibilities of the United States Public Health Service. Already the remarkable staff of this institute has measured up to the traditions of medicine and of its parent service and has won the esteem of the medical profession, the cooperation of the universities, and the gratitude of the ill.

"These are the days of great opportunities" [2] and there is at hand a "way of making mortality, in a manner, to be immortal; the time past we make our own by remembrance, the present by use, and the future by providence and foresight. That only may properly be said to be the long life that draws all ages into one; and that a short one that forgets the past, neglects the present, and is solicitous for the time to come." [15]

15. Seneca: Morals, Epistle VII, of Impertinent Studies and Impertinent Men: Philosophers the Best Companions.

PULMONARY COIN LESION

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and
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The problem of the asymptomatic, solitary, coin-shaped, pulmonary lesion was first fully presented by O'Brien and others,[1] who studied 21 patients in whom coin-shaped pulmonary roentgenographic shadows were seen on routine or survey chest roentgenograms. In all instances an exact diagnosis was impossible by clinical methods. Since an appreciable number of the lesions were probably serious in nature, an exploratory thoracotomy was performed on each patient in order to establish a histological diagnosis. Eight, or 38%, of the 21 patients had bronchogenic carcinoma, and the others had tuberculomas or other nonmalignant lesions. The natural conclusion of their study was that all such solitary, benign-appearing, pulmonary lesions should be treated by exploratory thoracotomy rather than by a long period of observation. Subsequent studies of solitary lung lesions by other investigators [2] show considerable differences in the selection of cases and in the types of lesions found at surgery. The percentage of malignant tumors (including bronchogenic carcinoma, lymphoma, metastatic carcinoma, and various types of sarcoma) that have been found has varied from 15 to 55%. The percentage of bronchogenic carcinoma only has ranged from 4.6% [2a] to 49%.[2d] The other common entities found have been tuberculomas and hamartomas.

The criteria for selecting patients have varied with different authors; however, all have agreed that the pulmonary shadows in question must be solitary, essentially asymptomatic, and reasonably circumscribed. It has also been agreed that the lesions must be in the lung parenchyma and that they must be inaccessible to histological diagnosis except by exploratory thoracotomy. On the other hand, some authors have included cavitating lesions and some have not, and there has also been a difference of opinion as to whether calcific lesions should be included in this category; however, the lack of agreement regarding the size of the lesion has been most apparent. Except for Sharp and Kinsella [2b] and Storey, Grant, and Rothmann,[2g] no authors have specified the exact size of the roentgenographic shadows found in their patients. Sharp and Kinsella confined their study of lesions to those between 1 and 4 cm. in diameter, while Storey used 5 cm. as his maximal size limitation. It is apparent from the roentgenograms published in various papers that many patients with roentgenographic shadows much greater in diameter than 4 cm. have been included. O'Brien, Tuttle, and Ferkaney used the term "coin" and thereby implied definitely small, solitary le-

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1. O'Brien, E. J.; Tuttle, W. M., and Ferkaney, J. E.: Management of Pulmonary "Coin" Lesion, S. Clin. North America **28**: 1313-1322 (Oct.) 1948.

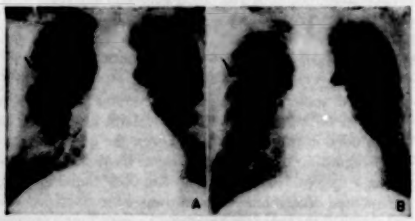
2. (*a*) Effler, D. B.; Blades, B., and Marks, E.: The Problem of the Solitary Lung Tumors, Surgery **24**: 917-928 (Dec.) 1948. (*b*) Sharp, D. V., and Kinsella, T. J.: Significance of Isolated Pulmonary Nodule, Minnesota Med. **33**: 886-888 (Sept.) 1950. (*c*) Husfeldt, E., and Carlsen, C. J.: Diagnostic Thoracotomy for Solid Pulmonary Infiltrates, Thorax **5**: 229-232 (Sept.) 1950. (*d*) Davis, E. W., and Klepser, R. G.: Symposium on Diagnosis and Treatment of Premalignant Conditions; Significance of Solitary Intra-Pulmonary Tumors, S. Clin. North America **30**: 1707-1715 (Dec.) 1950. (*e*) Wolpaw, S. E.: The Diagnosis and Management of Asymptomatic Isolated Intrathoracic Nodules, Ann. Int. Med. **37**: 483-505 (Sept.) 1952. (*f*) Hood, R. T., Jr.; Good, C. A.; Clagett, O. T., and McDonald, J. R.: Solitary Circumscribed Lesions of the Lung, J. A. M. A. **152**: 1185-1191 (July 25) 1953. (*g*) Storey, C. F.; Grant, R. A., and Rothmann, B. F.: Coin Lesions of the Lung, Surg., Gynec. & Obst. **97**: 95-104 (July) 1953.

sions. They gave no exact size limitation however, and some of the roentgenograms show solitary shadows that appear to be considerably more than 4 or 5 cm. in diameter. In view of these differences in criteria of selection, it is not surprising that such different reports have been published on the incidence of solitary pulmonary shadows subsequently proved to be malignant tumors.

It is our purpose to emphasize the problem of the small, solitary, pulmonary lesion commonly referred to as a coin lesion with regard to the criteria of case selection and also to present a study that we feel is pertinent in the evaluation of the many benign-appearing pulmonary lesions of this type being found in chest surveys. This has seemed especially important to us because of the common and persistent connotation of benignancy associated with the use of the term "coin lesion."

CRITERIA FOR SELECTION OF CASES

The patients in this study were all seen by the thoracic surgeon after a solitary, isolated, round or oval (coin-shaped), asymptomatic pulmonary shadow was found either on a routine chest roentgenogram or on a chest survey roentgenogram for tuberculosis. Exploratory thoracotomy was performed in each case. The following criteria for selecting the cases were carefully observed. 1. Only a solitary lesion was noted on the roentgenogram of the chest. 2. There was no evidence of attachment of the lesion to the chest wall. 3. The lesion was located in the lung parenchyma and was surrounded by aerated lung tissue. 4. There was no cavitation. We consider the presence of cavitation in any unidentified pulmonary lesion simply an additional indication for surgical exploration. 5. The lesion was well circumscribed. 6. No adjacent pulmonary infiltration was noted. 7. No lesion was more than 4 cm. in diameter. If larger lesions were included, the series would be much greater; however, larger lesions are automatically considered, not only by surgeons but also by most roentgenologists and practitioners, to demand exploration. Difficulties and dangers arise in the procrastination that occurs with smaller, or coin-sized, lesions. The 4-cm. limitation proposed by Sharp and Kinsella agreed with our experience. 8. There were no symptoms that in themselves encouraged surgical exploration. 9. It was not possible to establish a histological diagnosis by bronchoscopy or by other means.



Chest roentgenograms of the patient in case 1. *A*, showing coin lesion 4 cm. in diameter just before surgery. *B*, one year previously, showing 2 cm. coin lesion. Bronchogenic carcinoma was found.

It is not feasible to give a detailed presentation of all 39 cases included in this study. In all instances these patients had any indicated sputum studies, including cultures for Mycobacterium tuberculosis, tuberculin and coccidioidin skin tests, multiple chest roentgenograms, and bronchoscopy. Six brief clinical case summaries are presented that are representative of the whole group. The preoperative diagnosis in all cases was pulmonary coin lesion of an undetermined nature. There was no surgical mortality, and the surgical morbidity was low. Twenty-eight of the patients were in the Veterans Administration Hospital, Portland, Ore., and 11 were private patients of one of us (J. F. H.).

REPORT OF CASES

Case 1.—A 57-year-old white man was admitted to the hospital after a routine preemployment chest roentgenogram showed a circumscribed, coin-shaped, solid lesion, 4 cm. in diameter, in the upper lobe of the right lung (see figure, *A*). The patient had had a nonproductive cough for three months. One year before a roentgenogram of his chest had been taken for the same purpose, and a review of this earlier film revealed the same lesion, which was 2 cm. in diameter at that time (see figure, *B*). At the time the first roentgenogram was taken the patient had had no symptoms referable to the chest. Investigation, including bronchoscopy, was negative. An exploratory thoracotomy was performed, and a frozen section of the excised lesion revealed bronchogenic carcinoma. An upper lobectomy was performed, and the patient made an uneventful recovery.

Case 2.—A 64-year-old white man had a solitary, circumscribed pulmonary lesion, 4 cm. in diameter, in the upper lobe of the right lung, seen on a survey chest roentgenogram. The patient was seen in the Veterans Administration Hospital, where thoracotomy was advised, but he refused because he was asymptomatic. The patient was under observation for nine months, with roentgenograms taken repeatedly. No appreciable change was noted in the appearance of the lesion. The patient finally consented to exploratory thoracotomy, and a small lesion that appeared grossly benign was removed by local excision. However, microscopic sections of the lesion proved it to be an anaplastic bronchogenic carcinoma, and a lobectomy of the upper lobe of the right lung was performed.

Case 3.—A 48-year-old white man was admitted to the hospital with an asymptomatic, coin-shaped lesion, 2.5 cm. in diameter, in the middle of the left lung that had been observed on roentgenograms for four years with no change being noted. Thoracotomy was performed, and the lesion, which proved to be a hamartoma, was excised.

Case 4.—A 45-year-old white man was referred to the Veterans Administration Hospital with a sharply circumscribed, round lesion, 3 cm. in diameter, in the parenchyma near the hilum of the right lung, which was found on a survey chest roentgenogram. Thoracotomy was done, and the lesion, which was excised, was a hamartoma.

Case 5.—A 43-year-old white man was admitted to the hospital with a coin-shaped, discrete lesion, 3 cm. in diameter, in the lower lobe of the left lung. He had had a slight, productive cough for one month. All sputum studies and bronchoscopy were negative. The tuberculin skin test was positive. Thoracotomy with local excision of the lesion was accomplished, and it proved to be a tuberculoma.

Case 6.—A 54-year-old white man was admitted to the Veterans Administration Hospital with a small, round, solid lesion, 2 cm. in diameter, that was seen in the upper lobe of the left lung on a routine chest roentgenogram. He complained of a nonproductive chronic cough, thought to be associated with excessive cigarette smoking, that had been present for the past 30 years with no recent change or hemoptysis. All studies were negative except for an equivocal coccidioidin skin test. Thoracotomy was performed, and the lesion, which was locally excised, was a coccidioidal granuloma.

COMMENT

The incidence of bronchogenic carcinoma in this series was 10.3%, which is higher than the 4.6% recorded by Effler, Blades, and Marks.[28] These authors pointed out,

however, that their series was drawn largely from a relatively young age group. It would seem, as one might anticipate, that the older the patients the higher the incidence of bronchogenic carcinoma. The figure of 10.3% is far lower, however, than the 49.0% incidence of bronchogenic carcinoma reported by Davis and Klepser.[2d] The average age of the patients in our series was 49 years, which is essentially the same as the average age of the group reported by Davis and Klepser. The wide difference between the 10.3 and 49.0% incidence of bronchogenic carcinoma is possibly a result of differences in the maximal size of the lesions that have been included in the respective studies. Our criteria for selection of cases are otherwise similar to the criteria outlined by Davis and Klepser.

One case of solitary melanoma of the lung was included in this series; no extrapulmonary primary source of this was found. With the inclusion of this case, a case of a patient with alveolar cell carcinoma, and the cases of patients with bronchogenic carcinoma, the incidence of malignant coin lesions becomes 15.3% of the total. We believe that the frequency of bronchogenic carcinoma in small circumscribed, pulmonary (coin) lesions is actually nearer to 10.3% than to some of the much higher percentages that have been reported. The high incidence of coccidioidal granulomas (see table) in this study is probably a simple reflection of the fact that many of our patients live or have lived near areas where this disease is endemic. Cotton and Birsner[3] have suggested that coccidioidal granulomas should be called coccidiomas. The entire significance of these "coccidiomas" is not fully known.

Pulmonary Coin Lesions Found in Exploratory Thoracotomy

Diagnosis	No.	%
Bronchogenic carcinoma	4	10.3
Alveolar cell carcinoma	1	2.6
Melanoma (metastatic?)	1	2.6
Tuberculoma	12	30.7
Hamartoma	9	23.0
Coccidioidal granuloma	7	18.0
Bronchogenic cyst	2	5.0
Neurofibroma	1	2.6
Lipoma	1	2.6
Bronchial adenoma (peripheral)	1	2.6
Total	39	100

The wisdom of surgical exploration and histological identification of these solitary, benign-appearing, coin lesions is evident. The possibility of primary bronchogenic carcinoma being present is alone sufficient justification for exploration. The custom until recently was to observe these patients with a presumptive clinical diagnosis of tuberculoma or benign neoplasm over a long period of time. Unfortunately, some physicians still treat patients with this type of lesion by prolonged observation. The danger of this is well illustrated in cases 1 and 2. The roentgenographic appearance of the lesion or any combination of clinical and laboratory tests will not show what the histological nature or bacteriological threat may be in an individual patient. A coin lesion in the lung should be considered as one considers a small lump in the breast, i. e., as malignant until proved otherwise.

It is generally accepted that the proper treatment for a known tuberculoma is removal by surgery. It has been shown that many so-called tuberculomas contain viable tubercle bacilli. These tuberculomas can and do caseate, cavitate, and produce widespread pulmonary disease.[4] Mitchell[4d] believes that approximately 25% of the tuberculomas that are not treated by surgery or prolonged chemotherapy "break down." Of the lesions in this study, 31% proved to be tuberculomas. Some authors have emphasized the presence of calcification (particularly laminated calcification) in the belief that it is frequently not necessary to identify further the lesion if this is present. We believe that the presence of calcium in a coin lesion should not lend toward deferring surgical exploration unless the patient concerned is a poor surgical candidate with systemic disease or unless the lesion is less than 1.5 cm. in diameter and is solidly calcified. After the surgeon is satisfied as to the histopathological diagnosis, he may then perform whatever definitive surgical treatment is indicated. In view of the many chest roentgenogram surveys that are being conducted throughout the United States, it is particularly important that all physicians be made aware of this problem in order that they may properly advise the patients referred to them from the survey centers.

SUMMARY AND CONCLUSIONS

Results in a series of 39 cases of solitary, parenchymal, so-called pulmonary coin lesions show that a significant number of these lesions are malignant neoplasms or tuberculomas and should, for this reason alone, be treated by exploratory thoracotomy and identification rather than by a period of observation. Prompt surgical attack on the so-called pulmonary coin lesion affords one of the best opportunities for early discovery and early treatment of bronchogenic carcinoma.

2455 N. W. Marshall St. (10) (Dr. Higginson).

3. Cotton, B. H., and Birsner, J. W.: Surgical Treatment in Pulmonary Coccidioidomycosis: Preliminary Report of 30 Cases, J. Thoracic Surg. **20**: 429-443 (Sept.) 1950.

4. (*a*) Medlar, E. M.: Pathogenesis of Minimal Pulmonary Tuberculosis: Study of 1,225 Necropsies in Cases of Sudden and Unexpected Death, Am. Rev. Tuberc. **58**: 583-611 (Dec.) 1948. (*b*) Medlar, E. M.: Symposium on Tuberculosis: Pathogenetic Concepts of Tuberculosis, Am. J. Med. **9**: 611-622 (Nov.) 1950. (*c*) Grenville-Mathers, R.: The Natural History of So-Called Tuberculomas, J. Thoracic Surg. **23**: 251-252 (March) 1952. (*d*) Mitchell, R. S.: Late Results of Treatment of the Solitary Dense Tuberculous Pulmonary Focus (Tuberculoma) Without Resection or Chemotherapy, Ann. Int. Med. **39**: 471-478 (Sept.) 1953.

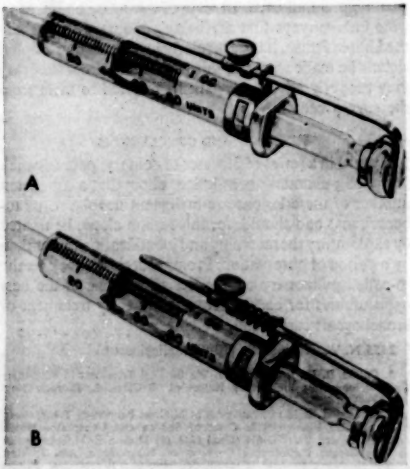
Cat Scratch Fever.—The skin test using an antigen prepared from materials obtained from lymph nodes of patients with the disease [cat scratch fever] appears to be the best available diagnostic procedure at present. This conclusion is substantiated by the results of skin-test studies on a large number of cases of cat scratch disease and normal controls. The serologic examination and the histopathology of the biopsied node, although suggestive, can in no way be considered specific. In the presence of a history of contact with cats, especially a history of a cat scratch, and a positive skin test, biopsy of an affected enlarged lymph node is not considered essential for the establishment of the diagnosis of cat scratch fever. The etiology of this disease remains obscure, as does its relation to the lymphogranuloma venereum-psittacosis group. Caution in the use of antigenic material for skin testing from patients with a history of jaundice is emphasized.—S. S. Kalter, J. E. Prier, and J. T. Prior, Recent Studies on the Diagnosis of Cat Scratch Fever, *Annals of Internal Medicine*, March, 1955.

CLINICAL NOTES

INSULIN SYRINGE CONTROL

Donald E. Yochem, M.D., Columbus, Ohio

The instrument described here fulfills the need for a satisfactory device that will accurately control the amount of insulin that is drawn into the syringe. It maintains accurate control of the prescribed units and simplifies preparation for the injection. It is compact, inexpensive, and easy to use. This device enables the patient to remove the plunger easily for cleaning and sterilizing the syringe, without changing the adjustment of the control or detaching it from the syringe. It is not an automatic injecting device.



Instrument to accurately control the amount of insulin that is drawn into the syringe. *A*, without spring, for use when the plunger need not be retracted. *B*, with spring, to permit retraction of plunger.

This instrument consists of (see figure, *A*): (1) a clasp and stop that are readily adaptable to the syringe barrel, (2) a gauge piece that can be easily attached to or removed from the plunger head, and (3) a small set screw mounting. To adjust for use, it is only necessary for the physician (or patient when instructed) to place the plunger at the number of units prescribed and tighten the set screw securely while the set screw mounting is against the clasp stop. This stop then limits the retraction of the plunger so the amount of insulin withdrawn is exactly the number of units prescribed. Since the retraction of the plunger is properly limited, the volume of air forced into the vial equals the volume of insulin withdrawn. This prevents a vacuum or pressure in the vial. Therefore, there is no tendency for the plunger to change position and alter the dose of insulin from this cause when the needle is withdrawn from the vial. The unique construction of the gauge piece greatly reduces the possibility of losing insulin and prevents aspiration of air, due to accidental movement of the plunger, while preparing for the injection. It also prevents the plunger from sliding out of the barrel, thus eliminating broken plungers from this common cause.

This instrument can be used on B-D Yale, C-M-D TruFit, Ideal, Lilly, and Wocher's 1 cc. short-type insulin syringes. It is available separately for attachment to these syringes, or already attached to a Vim short-type insulin syringe. It can be obtained from MacGregor Instrument Co., Needham, Mass., and is manufactured by Columbus Medical Devices, Inc., 945 King Ave., Columbus 12, Ohio.

It has been observed that some diabetic patients often take more or less insulin than prescribed. This is frequently due to defective vision, which makes it difficult to see the small unit markings on the syringe. Thus, there are several reasons that may be responsible for patients receiving doses of insulin that deviate from the prescribed amount. The importance of accuracy in unit measurement is even greater when the higher concentrations of insulin, as U-80, are used. This instrument is especially useful to those who are afflicted with blindness or defective vision, or for other reasons experience difficulty with preinjection procedures. In most of these cases it eliminates the necessity of having a nurse, relative, or other person give the insulin. Totally blind patients can administer their own insulin with this instrument. They will know that the vial is empty or does not contain a full dose if, when withdrawing insulin, the plunger moves without the usual resistance at any time before reaching the stop. Even patients with normal vision find that this instrument enables them to administer their insulin more easily, accurately, and with greater confidence. Although this instrument was developed primarily for the administration of insulin, it is adaptable to other parenteral medications that require constant, accurate dosage, whether administered by the patient or another person, especially when such medications are withdrawn from multiple dose vials. Also, its use for large-scale immunization is feasible, since it insures accuracy and saves time. Clinical trials with this instrument, without the spring, were made in the diabetes clinic, College of Medicine, Ohio State University. The models used were hand tooled, but commercial models are now available.

In cases in which it is deemed necessary to retract the plunger before injecting, a small spring (that is provided) can be readily placed between the set screw mounting and the clasp stop (see figure, *B*).

246 N. High St.

Use and Abuse of Blood.—Blood is a potentially lethal commodity requiring precise care in its preparation and use. Dangers include hemolytic reactions and circulatory overload as the most common. Pyrogenic and allergic reactions, disease transmission, gas embolism and septicemia from contamination further enhance the potential difficulties. Mismatched transfusions must be diagnosed immediately and treated promptly if one is to prevent death from renal shutdown. Circulatory overload resulting in cardiac failure is more common than usually appreciated and must be watched for, especially in older patients. Whole blood depresses bone marrow activity so that inhibition of red blood cell regeneration usually more than offsets any temporary advantage gained through transfusion unless the latter is specifically indicated.—D. T. Hall, M.D., Use and Abuse of Blood, *Northwest Medicine*, September, 1954.

TREATMENT OF HERPES ZOSTER WITH GAMMA GLOBULIN

I. Irving Weintraub, M.D., Gainesville, Fla.

With the exception of a report by Gros [1] in 1952, there are no publications concerning the therapeutic effectiveness of gamma globulin in the treatment of herpes zoster. The report by Gros concerns 11 German patients who responded very well to the treatment even though the supply of gamma globulin was limited.

METHOD

I have used gamma globulin to treat six patients, three men and three women ranging in age from 20 to 60 years; the classic symptoms of herpes zoster, systemic manifestations, radicular pain, and herpetic skin lesions were present in all but one of the patients treated, and he had typical postherpetic neuralgia of two years' duration. The characteristic herpetic lesions were distributed over the thoracic region on one side in three patients, over the lumbosciatic area in one patient, and over the abdominal area in one patient. The area of involvement of the one patient with postherpetic neuralgia was the supra-orbital nerve; it had been injected twice, and a neurectomy had been performed, with no appreciable benefit. All the patients were observed daily for the first three days and then twice weekly. With the exception of one patient, who received an initial dose of 20 cc. of gamma globulin, all of the patients received an initial dose of 10 cc. The gamma globulin was given intramuscularly, half the dose in each buttock; 5 cc. was given every second day until the pain ceased and the vesicles began to disappear.

Use of Gamma Globulin in Treatment of Six Patients with Herpes Zoster

Case	Age	Sex	Duration of Disease Before Treatment, Days	Area of Eruptions	Complication of Disease	Time Required for Relief of Pain, Hr.	Time Required for Skin Eruptions to Begin to Clear	Initial Dose of Gamma Globulin, Cc.
1	56	F	12	Abdominal	Hemorrhagic skin lesions	12	2 days	20
2	59	M	7	Lumbosciatic	None	48	4 days	10
3	42	F	2	Thoracic	None	12	24 hr.	10
4	30	M	5	Thoracic	None	12	12 hr.	10
5	20	F	3	Thoracic	None	24	2 days	10
6	60	M	2 yr.	Ophthalmic	Postherpetic neuralgia	No relief	No rash	10

RESULTS

In four of the six patients, a dramatic relief of pain occurred within the first 24 hours. There was no further progression of the skin lesions in any case after the first injection, and there was no evidence of any secondary infection. The patient whose lesions had been present for seven days before the first treatment was relieved of pain within 48 hours; the one whose disease had lasted for 12 days had hemorrhagic skin lesions at the time treatment with gamma globulin was instituted; the lesions that were just beginning to form at the time of the gamma globulin injection disappeared completely without scarring; those that were already hemorrhagic at the time of injection receded rapidly, without any gangrene or ulcer formation. In all cases, the inflamed, reddened halo on the vesicles disappeared after the first injection. Complete healing of the skin lesions progressed in the usual manner and required one to three weeks. The rate of healing of the superficial lesions seemed to vary with the duration of the lesions prior to the first injection of gamma globulin. In the one case of postherpetic neuralgia, the patient showed no improvement whatsoever. No complications or sequelae were observed in the other five cases. All of the patients except the one with hemorrhagic skin lesions, who was hospitalized, continued their work in the usual manner, in spite of extensive involvement in some cases.

108 N. W. 7th St.

Dr. Frank Hall, of the Alachua County Health Department, supplied the gamma globulin used in this series.

1. Gros, H.: Die Behandlung des Herpes zoster mit Humanglobulin, Deutsche med. Wchnschr. **77**: 1074-1076 (Sept. 5) 1952.

COUNCIL ON INDUSTRIAL HEALTH

DERMATOSES DUE TO OILS USED IN INDUSTRY

This report has been prepared by the Committee on Occupational Dermatoses of the Council on Industrial Health, American Medical Association. The Committee consists of Drs. John G. Downing, Chairman, Donald J. Birmingham, Harry Foerster, James W. Jordan, George E. Morris, Ray O. Noojin, and Leonard F. Weber.

C. M. PETERSON, M.D., *Secretary,*
Council on Industrial Health.

Dermatoses caused by exposure to cutting oils are common eruptions among industrial workers in America. These eruptions are seen in lathe and drill press operators, tool makers, and others who are constantly exposed to these oils used in various industrial operations. Such dermatoses from cutting oils cause from 10% to 15% of all eruptions seen by dermatologists.[1] The number of cases seen by general practitioners cannot be estimated, but a recent survey of the membership of the American Academy of General Practice notes that 94% of its members "see industrial cases." [2] Thus, most practitioners have had to treat cutting oil dermatoses. The importance of the problem is further emphasized by the fact that there were over one-half million employed machinists and tool makers in the United States according to the 1950 census,[3] and, with the rapid expansion of industry, this figure is probably much greater today.

1. Downing, J. G.: Analysis of Claims in Industrial Dermatoses, J. A. M. A. **111**: 1536-1542 (Oct. 22) 1938. Schwartz, L.: Incidence of Occupational Dermatoses and Their Causes in Basic Industries, ibid. **111**: 1523-1528 (Oct. 22) 1938. Klauder, J. V., and Gross, B. A.: Actual Causes of Certain Occupational Dermatoses: Further Study with Special Reference to the Effect of Alkali on Skin, Effect of Soap on pH of Skin, Modern Cutaneous Detergents, A. M. A. Arch. Dermat. & Syph. **63**: 1-23 (Jan.) 1951.

2. Kilgus, J. F., Jr.: Industrial Medicine: Legitimate Field for General Practitioner, Indust. Med. **22**: 225 (May) 1953.

COMPOSITION AND PURPOSES OF CUTTING OILS

Cutting oils are of several types: insoluble oils (true cutting oils), soluble-type products, chemical coolants (alkaline coolants), and sulfurized fats and kerosene.

Insoluble Cutting Oils.—The true cutting oils are usually insoluble oils of the paraffinic or naphthenic types. The insoluble oils may be used in one of the following forms: 1. Straight mineral oil. 2. Mineral oil to which elemental sulfur has been added. Lard oil may also be added to this mixture. 3. Mineral oil plus sulfurized fatty oil (lard or oleic acid) containing 6 to 8% sulfur. This type is adaptable for heavy cutting operations. 4. Mineral oil plus sulfochlorinated fat. 5. Mineral oil plus sulfur and/or chlorinated additives. Additives containing sulfur and/or chlorine may be added to the above oils. Organic phosphorus compounds may also be used, but they are not common additives in all oils.

Soluble-Type Products.—The soluble-type products may represent a number of different compounds. They are roughly composed of mineral oil and emulsifiers such as petroleum sulfonates and soaps. In addition, inhibitors and disinfectants, such as phenols, cresols, phenolic amines, or nitrobenzenes, are added to prevent deterioration of the oil and to act as bacteriostatic agents. Manufacturers of cutting oils incorporate bacteriostatic agents, usually in not over 1 to 2% concentration. Occasionally users add such agents to the oil in excessive amounts, sometimes up to 10%. These mixtures are then diluted many times with water to form emulsion-type cooling agents. Although these products are sometimes termed "soluble oils," they are not soluble in the strict sense of the word, but are actually emulsifiable oils. The alkalinity (pH 8-9) of the emulsions is considered to be effective as a rust control measure. Dermatoses from these oils are now being seen with increasing frequency.

Chemical Coolants and Sulfurized Fats and Kerosene.—Another form of machining compound is called the chemical coolant, which is frequently made of sodium nitrite plus an amine, such as triethanolamine, plus water and a dye, usually fluorescein. Still a fourth type of machining oil is a combination of sulfurized fats and kerosene used for honing operations.

Cutting oils are primarily used in order to allow high production, fast cutting, and a good finish surface to the machined part. In addition, they lessen the friction, cool and lubricate the parts, and preserve the cutting tool tips. The soluble oils, because of their high water content, are better cooling agents than are the insoluble oils.

VARIETY OF DERMATOSES CAUSED BY CUTTING OILS

When cutting oils contact the skin of the worker, they may cause dermatoses of the following types [4]: comedones or blackheads, folliculitis, erythema and defatting of the skin, eczematization, granulomas, melanoderma, infected wounds, and chloracne. The most common dermatoses caused by insoluble oils are comedones or blackheads, appearing particularly on the forearms, the dorsa or proximal phalanges of the hands, the thighs, and on the face. This may progress to a true folliculitis, in which one has comedones, pustules, papules, abscesses, and carbuncles. The latter may leave disfiguring scars. Comedones are due to plugged follicles and sweat pores. When the hair follicles become infected, the condition is known as folliculitis.

The typical condition present in a worker with oil dermatitis is erythema of the skin on the dorsa or proximal phalanges, broken-off hairs, and the presence of comedones in the hair follicles. Erythema may also occur on other parts of the body, because some oils have the ability to defat the skin so as to cause redness, dryness, and fissures, leading to eczematization. It is the custom in certain operations to use compressed air to blow oil off machined parts. The oil is dispersed in a fine spray and contaminates the entire working area, saturating the clothing of the individual. Such a procedure is hazardous and frequently results in a diffuse redness of much of the body from the defatting action of the oil. True eczematized eruptions of the hands and forearms may occur especially from the soluble oils and may be due to the oil itself, to the inhibitor, to rancidity of the oil, or to the presence of bacteriostatic agents contained within the oil. Workers with this eruption show minute vesicles on the hands, especially on the sides of the fingers, in the finger webs, and on the dorsa of the hands. These vesicles may become infected, and superficial pustules may be seen at times.

Two types of granulomas may occur from these oils, when they plug the follicles. The most common are the small, matchhead sized, yellowish, slightly raised, solid papules that usually occur on the forearms; these are multiple in nature and at times even show a linear characteristic. Many of them show a central comedone, and they are sometimes pruritic. The large, single granuloma is of less frequent occurrence, is about a centimeter and a half in diameter, usually is a hard, firm, raised (4 to 6 mm.) nodule in the skin, not fixed to underlying structures, and shows a slight depression with a darkened center. Hard, dry brown or black keratoses may occur on the dorsa of the hands and fingers in those who are exposed to oils derived from shale or tar.

Melanoderma is a brownish-yellow pigmentation of the extensor surfaces of the forearms or of the face and neck. It is frequently seen in the Mediterranean nationality groups. The affected area is usually brownish to tan-pigmented, slightly thickened, and may show plugged follicles. The latter are not numerous, however, and the diagnosis does not depend on their presence. Oils containing chlorinated hydrocarbons tend to produce melanoderma more readily than do other oils. Melanoderma is also seen among workmen who manufacture certain of these compounds.

Small slivers of metal may cause wounds, especially where waste contaminated with metal particles is used for wiping the skin or cleaning the machine. These wounds frequently become septic. Vesicles or pustules occur and may spread peripherally, resulting in vesicular areas of various sizes, especially on the forearm or back of the hand. Small particles of metal also may cause foreign body granulomas. Allergic, eczematous contact-type dermatitis may be caused by the inhibitors, disinfectants, and other additives. Other eruptions sometimes are caused by the end-products that occur during the breakdown of the oil in the machining process. Although sensitivity to some of the metals is not common, reports concerning this type of allergic reaction have appeared in the literature.

The use of solvents, such as naphtha, gasoline, kerosene, harsh abrasive skin cleansers, or those waterless cleansers that are high in hydrocarbon or alkali content, are additional causes of dermatitis. Chloracne is caused by exposure to certain chlorinated hydrocarbons and is not uncommon among those who handle the insoluble cutting oils that contain such compounds.[5] The chlorinated hydrocarbons are present in some formulations; however, sometimes they may be added to the oil by the user. This form of cutting oil is used for heavy-duty work, and while the machine is in use, vapors and mists generated by the friction tend to contact the exposed parts of the body and frequently succeed in impregnating the clothing so that lesions of chloracne may be seen on any area of the body. Inhalations of such mists and vapors in sufficient amounts may cause adverse liver and other systemic effects. The lesions are not caused by contact with chlorine alone or with the hydrocarbon alone but by certain combinations of these two materials. Several of the above dermatoses may become secondarily infected and the worker may develop cellulitis and lymphangitis, with erythema locally or with a red streak extended up the forearm and arm to the axilla. These patients usually have chill and fever.

DIFFERENTIAL DIAGNOSIS

The differential diagnosis of these conditions may be difficult for the following reasons. Comedones and pustules are the typical lesions of "teen-age" acne. Close examination of the patient, however, will reveal that industrial acne is seen on the extensor surfaces of the forearms and on the thighs and rarely confines itself to the face, upper chest, and back, as does nonoccupational acne. Further, it is unusual to see widespread acne in men beyond the age of 30. Erythema and dryness of the skin can

3. Census of Population, vol. 1-2, U. S. Bureau of the Census, 1950, table 124.

4. Recognition and Prevention of Industrial Dermatitis, with Additional Reference to Oil Dermatitis and Folliculitis: Report of the Committee on Occupational Dermatoses, American Medical Association, Report of the Council on Industrial Health, J. A. M. A. 122: 370-375 (June 5) 1943.

5. Peck, S. M.: Dermatitis from Cutting Oils, Solvents and Dielectrics, Including Chloracne, J. A. M. A. 125: 190-196 (May 20) 1944.

be caused by solvents, abrasive soaps, and other cleaning agents that may be contacted either at work or at home. Small papillomatous lesions on the forearms and hands are clinically suggestive of flat warts. A solitary granuloma may resemble the foreign body reaction produced by beryllium, silica, or asbestos or may suggest a carcinomatous reaction of the skin. In this instance, histological examination may be the only method of determining the true nature of the lesion. Keratoses on the hands, forearms, or face may resemble the clinical appearance of the senile keratoses. Melanoderma may be mistaken for ordinary effects of sunlight or possibly adrenal cortical hypofunction (Addison's disease). The occurrence of the pigmentation in the cold months of the year will assist in ruling out the tanning effect of sunlight, and other clinical diagnostic means can be employed to eliminate the possibility of Addisonian pigmentation. Eczematous contact-type dermatitis of the hands may be caused by any number of primary irritants or sensitizers contacted at work or at home. Valuable help in determining the causative factor can often be accomplished by the use of the patch test when the eruption is suspected of being due to a sensitizing agent. Chloracne may be mistaken for cystic acne; however, the presence of comedones may be more prominent than with regular acne.

Value of Patch Tests.—Cutting oils and solvents, as previously indicated, may produce an eczematized contact dermatitis in two ways: 1. Prolonged or repeated skin contact with these substances may cause a defatting of the skin with subsequent dryness, scaling, erythema, and fissuring (primary irritation). 2. Workers may develop a specific hypersensitivity to one of the ingredients present in the cutting oils or solvents and display papulovesicular eruptions. Conventional patch tests admittedly do not always reproduce actual work conditions, thus they can easily be falsely interpreted. However, when specific hypersensitivity to one of the ingredients of the cutting oils or solvents does develop, properly applied patch tests are usually positive. Patch tests are of no value in testing primary irritants. In performing these tests, it is essential that proper dilution of the oils and solvents be employed. Space does not permit a listing of dilutions to be employed, but these may be found in any text on occupational dermatoses.

Other Predisposing Factors.—Besides direct contact with the oils, there are important adjuvant factors that predispose to the occurrence of the dermatoses associated with oils used in machining operations. Lack of cleanliness is the prime factor in the establishment of all industrial dermatoses. If, through negligence by the workmen or lack of proper cleaning facilities within the plant, oils or other cutting agents are not removed from the workmen's skin, they can cause one or more of the above-described dermatological conditions. If work-soiled clothing is allowed to maintain contact with the skin for long periods of time, dermatoses are very apt to ensue. The wipe rags and waste material used by the workers to remove oil from the skin, even though they appear clean, often contain sufficient amounts of oil to cause skin eruptions. Continued usage causes an accumulation of considerable amounts of oil and metal slivers within the waste material. Swarthy, oily, hairy skins, particularly of persons in the Mediterranean nationality groups, show a greater predisposition for the inception of occupational acne. Further, individuals affected with previous acne vulgaris are more prone to oil folliculitis than are others. Most industrial dermatoses are more prevalent in the summertime, when the workmen wear less clothing and are less likely to wear protective clothing and when increased sweating and subsequent maceration of the skin can bring about a greater vulnerability of the skin.

PREVENTION OF OIL DERMATITIS

Inasmuch as dermatitis from cutting oils represents a common form of industrial dermatosis, the remedy must be directed toward keeping contact with the offending agents at a minimum by environmental control measures and personal control measures. The accomplishment of this recommendation is dependent upon the efforts of progressive or informed management in providing and maintaining a clean working environment with proper washing facilities. The worker should also be thoroughly instructed as to the hazards involved and the methods of protection afforded him. A clean working environment can be obtained by shielding or enclosing the machines to protect the workers from oil splashes, providing good ventilation within the work area so that mists and vapors will not collect in the workroom, keeping the machinery as clean as possible, and maintaining clean floors, tables, and other equipment needed in the machining operations.

The personal cleanliness practices of the individual workman are extremely important. Employees should wash, preferably with warm water, and a suitable skin cleanser at lunch time and when quitting work. If the skin of the body becomes oil-soaked, the employee should take a shower and put on clean clothing. Employees should change to clean work clothes weekly or oftener if necessary. There are numerous industrial skin cleansers on the market, and, although not all skin cleaners will adequately remove the oil from a machinist's hands, as Cruickshank [6] pointed out after a series of tests made in England in 1948 and as was confirmed in another series of studies as late as 1952-1953,[7] still certain types of cleaning agents will perform a reasonably adequate removal. The plant physician, the safety engineer, and the industrial hygienist should be thoroughly familiar with the types of cleansers, their detergent qualities, and their effects upon the skin. By close coordination with the purchasing agent and by intelligent instruction of the workmen, maximum benefits can be expected from the use of good cleaning agents. Every effort should be made to discourage the use of solvents (gasoline, kerosene, etc.), harsh abrasive scrubbers, and other cleaners known to have a harmful effect upon the skin. Usually, proper and thorough washing procedures will leave the skin in good condition; however, some individuals with very dry skins may find it helpful to apply a bland skin cream or lotion to the hands and forearms after washing up at quitting time.

Impervious aprons and sleeves, such as the polyvinyl or Pliofilm plastics, should be used whenever they can be worn without creating an accident hazard. These types of clothing are valuable in shielding the body and extremities from oil splashes and sprays. They should be kept clean by frequent washing. Protective ointments do not categorically protect against all of the oils, but they may aid in preventing dermatoses by causing the workmen to wash thoroughly in order to remove them from their skin.

CONCLUSIONS

Many of the occupational dermatoses caused by cutting oils can be prevented. Such prevention depends upon an enlightened management and upon cooperative employees to gain the maximum efficiency in applying the preventive technique. When management is aware of the existing hazards within an industrial establishment and is willing to provide the proper environmental control measures, good results can be obtained by educating new and old workmen in regard to the existing hazards and by constantly stimulating their interests in their own health and safety. It is only by the combined efforts of management and labor, however, that a program dealing with preventing occupational dermatoses from oils can be effective.

6. Cruickshank, C. N. D.: The Evaluation of Skin Cleansers and Protective Creams for Workers Exposed to Mineral Oil, Brit. J. Indust. Med. 5: 204-212 (Oct.) 1948.

7. Morris, G. E., and Maloof, C. C.: Cutting-Oil Dermatitis, Indust. Med. 21: 573 (Dec.) 1952. Morris, G. E., and Maloof, C. C.: Some Causes of Cutting-Oil Dermatitis: II. A Study of Protective Creams, ibid. 22: 28 (July) 1953.

Responsibility of Attending Physician.—The physician in charge of the case is responsible for treatment of the patient. Consequently, he may prescribe for the patient at any time and is privileged to vary the treatment outlined and agreed on at a consultation whenever, in his opinion, such a change is warranted. However, after such a change, it is best to call another consultation; then the physician in charge should state his reasons for departing from the course decided at the previous conference. When an emergency occurs during the absence of the physician in charge, a consultant may assume authority until the arrival of the physician in charge, but his authority should not extend further without the consent of the physician in charge.—Principles of Medical Ethics of the American Medical Association, chapter 5, section 6, June, 1954.

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RENAL HOMOTRANSPLANTATION

The possibility of combating chronic renal insufficiency by the use of a transplanted kidney has attracted considerable attention in recent years. Unfortunately, premature claims of success have led many to believe such a procedure is imminently feasible. The detailed report by Hume, Merrill, Miller, and Thorn on their experience with this procedure in nine patients is therefore of timely interest.[1] At the outset, these authors emphasize that their studies were undertaken with full cognizance of the fact that renal transplantation is as yet not a justifiable therapeutic procedure. Their purpose, rather, was to gather information concerning the possible influence of chronic renal disease on the fate of renal homotransplants and to determine whether the fate of the transplanted kidney in man was similar to the fate of the transplanted kidney in lower animals. It was also considered possible that studies in humans might yield new lines of approach to the problem that could then be further evaluated in the laboratory animal.

All the patients studied were in terminal irreversible uremia and were prepared for surgery by the use of an artificial kidney. In most instances the transplanted kidney was buried in the medial aspect of the upper thigh of the recipient, the renal artery being anastomosed to the profunda femoris artery and the renal vein to the common femoral vein. The ureter was then brought through a stab wound in the skin. With this procedure it was possible to study independently the urine from the transplanted kidney and that from the recipient's own kidneys while the easily visible vascularity of the ureter provided a good index of the circulation of the transplant. Furthermore, biopsy of the transplant was simple, as was its removal in case of infection or necrosis.

In six cases, the donor kidneys were obtained from cadavers. In one case, the kidney had been removed from a live donor suffering from cancer at the lower end of the ureter, while in the remaining two cases the kidneys were obtained from donors who underwent a surgical procedure that involved draining the cerebrospinal fluid into the ureter for the relief of hydrocephalus. Wherever possible, the homograft was obtained from a donor whose blood type was similar to that of the recipient. In all cases, testosterone was given because of its reported anticatabolic effect and its reported beneficial effect on the kidney, and in six cases corticotropin or cortisone or both were given. Five of the nine transplanted kidneys failed to develop any measurable function. Four, however, actively secreted urine for periods lasting for 37 to 180 days. The period of activity in all cases followed an initial period of anuria lasting for 9 to 19 days that was attributed to ischemic nephrosis secondary to the anoxia incidental to the transplantation. During the period of maximum function, the donor kidneys performed better than the recipient's own kidneys, and in two cases there was considerable reduction in the blood urea nitrogen accompanied by improvement in the clinical status of the recipient.

The appearance of the transplanted kidneys at postmortem examination was typical of severe ischemic nephrosis in eight of the nine cases. In a patient with glomerulonephritis secondary to periarteritis nodosa, however, the findings were characteristic of a severe acute glomerulonephritis. Similar changes were not observed in transplants placed in two patients suffering from chronic glomerulonephritis. The authors raise the question as to whether in chronic glomerulonephritis the titer of the postulated antikidney autoantibodies falls after a period of time to ineffective levels. Another interesting finding was the widespread atherosclerosis in one transplant. The kidney was taken from a patient with mitral and aortic stenosis, and it was suggested that the atherosclerosis was the outcome of severe hypertension applied to a kidney from a hypotensive cardiac patient.

The authors compare their results with those reported by other investigators using dogs. They conclude that whereas the terminal histological picture is quite similar the clinical course was less stormy and the survival period of the graft was longer in the human being. They suggest that this may indicate that patients suffering from chronic nephritis have a decreased ability to form antibodies against homotransplants, and, in this regard, they note that their most successful transplant had been encased in a plastic bag with a view to isolating it from local lymphatic drainage in the hope of decreasing the antibody formation against it.

The authors felt their small series of observations did not permit any conclusions regarding the effect of such factors as blood group compatibilities and hormone administration on the outcome of renal homotransplants. They conclude, however, that since there are important species differences in renal homograft response animal experiments must be supplemented with continued clinical experience if progress is to be made in the field of homotransplantation.

1. Hume, D. M.; Merrill, J. P.; Miller, B. F., and Thorn, G. W.: Experiences with Renal Homotransplantation in the Human: Report of Nine Cases, J. Clin. Invest. 34: 327-382, 1955.

JOINT COMMISSION ON ACCREDITATION OF HOSPITALS

Within the past few years, there have developed a number of cooperative efforts on the part of national organizations in the health field, including the American Medical Association, for the purpose of exploring and, whenever possible, of taking concerted action in resolving problems of mutual concern. An outstanding example of this type of cooperation is the Joint Commission on Accreditation of Hospitals. The Joint Commission came into being on December 15, 1951, when the first meeting

was held in Chicago. Since that time, the program of the commission has become well established and accepted by the medical profession and the hospital field alike as the best mechanism through which high standards of patient care can be achieved in hospitals throughout the country on a voluntary basis.

The Joint Commission on Accreditation of Hospitals is sponsored by five great medical and hospital organizations: the American Medical Association, the Canadian Medical Association, the American College of Surgeons, the American College of Physicians, and the American Hospital Association. It is an independent, voluntary, nonprofit corporation organized to render a public service. Its main purpose is to improve the quality of care rendered to patients in hospitals. Its method of achieving this goal is to establish minimum standards of quality of patient care and then to invite all hospitals and physicians that offer care to the sick to meet or surpass those standards by improving their services and their facilities. The commission's basic philosophy is that a better job can be done by pooling the interests of the five member organizations in their common desire and goal to improve patient and hospital care than by each group acting independently. That such an approach is effective can be seen in two important changes that have occurred in the orientation of the program since it was taken over from the American College of Surgeons: 1. Emphasis is placed on the quality of patient care given to all types of patients rather than primarily to those with surgical conditions, as had formerly been the case. 2. In evaluating the hospital, stress is placed on the human factor in rendering patient care, not alone on the "brick and mortar" of the physical plant. The finest facilities mean nothing unless there is a high quality of patient care from a humane, interested, and responsible medical, nursing, and hospital staff.

The structure, organization, and facilities of a hospital determine its acceptability for accreditation. Any institution listed in the *Administrator's Guide* of the American Hospital Association that has 25 or more beds and has been in operation for at least one year is eligible for inspection. Eligibility extends not only to the typical voluntary nonprofit hospital operated by a religious, educational, or other philanthropic organization but to proprietary hospitals operated as private corporations and federal, state, county, township, and city hospitals, whether general or specialized in facilities offered.

Thus, nearly 4,000 hospitals in the United States are eligible. About 3,000 of these have met minimum standards for accreditation and have obtained certificates attesting to this fact. All standards for accreditation are based on what time and experience have shown to be the best means of assuring proper care of the hospital patients. These requirements include: (1) a physical plant and administration providing x-ray, laboratory, and other facilities for the adequate nursing care, feeding, and housing of patients with proper protection from fire, explosion, and other hazards; (2) restriction of the hospital's medical staff to physicians and surgeons who are graduates of approved medical schools, legally licensed, competent in their fields, and ethical in conduct; (3) maintenance of complete medical records on each patient, so that not only the physician but all concerned in the present or future may know what was found and what was done; (4) a well-organized staff of physicians permitted to practice in the hospital according to written rules and regulations subject to the ultimate authority of the hospital governing board; and (5) medical supervision of the staff to assure that each member is restricted to what he is competent to do and to enable each member individually and all collectively to increase diagnostic accuracy and good results of treatment. These are the essentials of a first-class hospital, representing the accumulated wisdom of years of scientific progress in medical care. The purposes, aims, and standards of the Joint Commission deserve wholehearted support by physicians, nurses, hospital personnel, and all others interested in the welfare of the sick.

Since the commission has been in existence for a little over three years, it is to be expected that there remain areas in which complete unanimity of opinion has not been reached. Uninformed criticism, however, can serve no useful purpose in resolving such problems. A clear understanding of the commission's program and of the manner in which it is being developed can only lead the thoughtful physician and his co-workers in the health field to the conclusion that the establishment of the Joint Commission on Accreditation of Hospitals represents another step forward in achieving the goal of the highest quality of medical care for the citizens of the United States and its good neighbor to the north. The American Medical Association, the Canadian Medical Association, the American College of Physicians, the American College of Surgeons, and the American Hospital Association are to be commended for their foresight in creating such an agency with its high-minded and worthy objectives.

DIETARY DEFICIENCY IN THE CAPTIVE GORILLA

The comparative approach is often a necessary and usually a fruitful one in solving problems of human physiology and pathology. Considerable interest is therefore attached to the necropsy findings, reported by Steiner, Rasmussen, and Fisher,[1] in Bushman, the famous gorilla who died four years ago in Chicago's Lincoln Park Zoo at the age of 22. His death was preceded by a seven-month illness, characterized by paresis of the legs and one arm that at the time was attributed to a combination of senile changes, arteriosclerosis, and peripheral neuritis.[1] Autopsy, however, revealed much more far-reaching findings, the elucidation of which might serve to throw light on certain human nutritional disorders as well as aid in the preservation of this important subhuman primate, now in grave danger of extinction.

Briefly, autopsy revealed severe retrogressive changes, selective in location and involving chiefly the spinal cord, testes, and heart and circulatory system. Thus the neurons of all levels of the spinal cord and of the dorsal root ganglions showed degenerative changes, and there was secondary demyelination and disappearance of axis cylinders in the peripheral nerves and demyelination in the ascending tracts of the spinal cord. Only a few neurons in the medulla and pons and none of the cells in the upper

1. Steiner, P. E.; Rasmussen, T. B., and Fisher, L. E.: Neuropathy, Cardiopathy, Hemosiderosis, and Testicular Atrophy in Gorilla, A. M. A. Arch. Path. 59: 5-25 (Jan.) 1955.

brain stem, cerebellum, or cerebrum were similarly affected. The testes showed virtually complete atrophy and sclerosis of the seminiferous tubules, with absence of spermatozoa or germinative epithelium and an apparent increase of interstitial cells. The heart showed dilation, particularly of the right chambers; interstitial myocardial edema; diffuse fatty changes in the myocardial fibers with considerable fragmentation of the fibers; and focal and diffuse myocardial fibrosis. There were sclerotic changes in the blood vessels of the heart and nervous system. In addition to these changes there was hemosiderosis and atrophy of the liver and of the spleen and atrophy of the limb muscles, presumably secondary to degeneration in the nervous system.

The authors of this report consider these pathological changes are consistent with a dietary deficiency. The fact that the animal was obese and the musculature well developed supports the idea of a lack of a specialized requirement rather than insufficient caloric intake. They compare the lesions to those seen in deficiencies of the vitamin B group in man and vitamin E deficiency in animals. While the findings are compatible with a hypovitaminosis of several members of the vitamin B group and possibly also of vitamin E, the fact that the zoo diet was adequate according to available knowledge suggests gorillas may have certain unique quantitative or qualitative nutritional requirements. This is supported by other reports of testicular atrophy and paralytic disease in captive gorillas and by the fact that the natural habitat of gorillas is limited to two areas in equatorial Africa, one in the Cameroons and one in the Eastern Belgian Congo. It is to be hoped that this report will stimulate further study on the dietary needs of a species so closely allied to man.

INDUSTRY'S SHARE IN MEDICAL EDUCATION

Leaders of business, medical education, and industrial medicine met in February in a panel discussion (see this issue, page 1587) on the modern corporation and the nation's health at the Northwestern University Medical School under the sponsorship of the National Fund for Medical Education. At this meeting Dr. Ward Darley, president, University of Colorado, and former president, Association of American Medical Colleges, said that industry's help is essential if the medical schools are to be successful "in building up a program of education that can translate our growing body of medical knowledge into effective health services for the American people." He stressed the fact that medical science is a composite of many sciences, basic and clinical, and that in order to prepare students to be useful physicians it has been necessary to pack more and more information into the curriculum, to lengthen the training period, and to develop the various specialities. One important function of medical education is to reduce the lag between new discoveries and their clinical application. He pointed out that in the modern trend to greater emphasis on preventive medicine the industries may become ideal laboratories for testing the effectiveness of various health promoting measures.

The dollars-and-cents value of industrial medicine and its close relation to community health was described by Dr. H. A. Vonachen, medical director of the Caterpillar Tractor Company, who also stressed the importance of prevention in any program of industrial medicine. The importance of medicine to industry can be shown by the saving that results from (1) prompt treatment of disease or injury in a worker, thereby shortening periods of absence from work; (2) controlling medical, hospital, and insurance expenses; (3) preventing injuries that would result in compensation claims; (4) aiding production through maintenance of better levels of general health; (5) preventing disabling diseases and injuries from occurring; (6) decreasing absences due to nonoccupational illness; and (7) preventing loss of management personnel through illness or emotional failure. Dr. Vonachen described a well-rounded inplant program as one that includes preemployment and periodic examinations, job placement counseling, health education, control of occupational hazards, testing of vision and hearing, and communicable disease and alcoholism control.

Dr. Robert E. Wilson, chairman of the board, Standard Oil Co. (Indiana), said that corporations could help community health agencies by supporting our medical schools, whose financial problems are staggering because the rapid advances of the medical sciences are placing new burdens on medical education at a rate that challenges their teaching programs. He said that, because the United States stands only fourth in the ratio of physicians to a unit of population, industries have recognized the neccessity for preventing any slackened output of physicians by our medical schools. The fact that industry is willing to assume a just share of the financial burden that the medical schools must bear and that they cannot bear unaided is shown by the strides already made by the National Fund for Medical Education. This fund was formed in 1949 under the leadership of President Dwight D. Eisenhower, then president of Columbia University, and has already distributed nearly 7 million dollars in unrestricted grants to the 80 medical schools in the United States. An amount equal to about half of this has been contributed by the medical profession through the American Medical Education Foundation. The continued support of the National Fund for Medical Education will mean that medical education can continue to advance.

ARTIFICIAL INSEMINATION

Elsewhere in this issue (page 1638) is a current appraisal of the medicolegal aspects of artificial insemination. The paucity of law relating to the procedure suggests that the public has given little serious consideration to its many implications. There are legal, social, and moral questions associated with the use of the procedure that have not been resolved. The rights of husbands, wives, children, donors, and physicians are not clear. The obligations and liabilities of all who participate in or who are affected by artificial insemination procedures are subject to conjecture and doubt. Medicine has made a scientific procedure available to society, but until the people individually and collectively determine and express public policy, in the form of legislation or otherwise, the uncertainties associated with the procedure will remain.

THE PRESIDENT'S PAGE

A MONTHLY MESSAGE

Any decision that is reached through the dominance of power over reason is usually a bad decision and either will be reversed later or, if not, marks a retreat from civilization. Unfortunately, a controversy has arisen between hospital administrations and the heads of certain departments of the hospital who are concerned directly with the practice of medicine. This controversy has to do with the terms of contracts and the degree of administrative control over these departments. Both parties, in some instances, have resorted to arbitrary methods of enforcing their point of view. This situation works to the detriment of all concerned, particularly to the patient, since the quantity and quality of medical care received depends upon an orderly and effective development of the services rendered by these particular departments.

I believe that these differences have arisen as a result of the changing pattern of medicine. The machinery of medicine, in these areas, has become massive and expensive. Its operation requires a constantly increasing number of skilled and highly trained workers. It must be housed in hospitals or other large institutions, and considerable capital is required to purchase and service it. The ownership of these tools of the profession has, to a large extent, passed from the hands of the physician.

Most hospitals are controlled by a lay board and directed by a lay administrator. These boards are usually made up of able and conscientious members of the community who have demonstrated their interest in the welfare of their community. It does not follow, however, that all of them have acquired an adequate understanding of the basic problems of medicine or of the differences that must exist in the administration of the professional and nonprofessional departments of a hospital. Faced by financial deficits, they may look to the professional departments as a source of income to bolster their failing finances.

Often, in seeking justification for this, they attempt to differentiate between the machine and its technicians, on the one hand, and the physician who, by reason of his training in his special field, directs it. They fail to see that medical intelligence developed the machine and trained its technicians and that physicians are responsible for the quality of the article produced. The continued maintenance and improvement of the department, from the standpoint of the quality of medical service rendered, is the responsibility of the department head. Since the welfare of the patient is dependent upon the quality as well as the quantity of service available, any resolution of the differences between the institution and a professional department head that does not recognize these facts is not consistent with the best interests of the public.

Medicine is not primarily interested in the exact financial terms of a contract between a hospital and a physician. The individual and an institutional board have a right to determine financial terms satisfactory to both of them. Medicine, however, is vitally concerned with those conditions of employment that affect the quality of medicine produced. We deem it proper, therefore, to point out those conditions of operation that are most favorable to the production of good care and that also will protect the just financial interests of the hospital.

Where an institution furnishes equipment, regular maintenance, floor space, and services of various kinds, it should be fully reimbursed, on an accounting basis, for all of these services rendered, including interest at the usual rate on capital investment. The physician concerned should be paid on the basis of training, experience, capabilities, and the extent of his responsibilities. The residual sum, after these primary obligations are met, should be set up under the joint control of the department head and the hospital administration. The sum should be used for amortization of the capital investment and for major replacement of equipment. It should further be used for improvement and extension of the plant and the equipment and for strengthening the personnel with the purpose of making available the volume and quality of service required. If, after these needs are satisfied, a surplus still remains, it might well be applied to lowering the cost to the patient by a suitable adjustment of fees.

In order to maintain and further extend the services of his department, the physician must be the final authority in determining the physical needs of the plant and the number and qualifications of his technical staff. He should set fees in general agreement with the accepted rates in a particular community, with due regard to the financial capabilities of the patient and the financial needs of the department. The physician rendering the service should be identifiable by the patient and the amount of his charge should be made known to the patient.

As long as such funds remain under complete control of either the department head or the administration of the hospital, controversy will continue to the detriment of the physician, the hospital, and the patient. The hospital and the physician have a true partnership of interest in striving to provide a high quality of care for the patient and at as reasonable a cost as is compatible with good service. They should have as close and as just a partnership in the administration and utilization of the funds derived from the operation of a medical department of a hospital.

WALTER B. MARTIN, M.D., Norfolk, Va.

ORGANIZATION SECTION

A. M. A. BOSTON CLINICAL MEETING

All persons who desire a place on the lecture program at the Boston Clinical Meeting of the American Medical Association Nov. 29-Dec. 2, 1955, are urged to communicate immediately with the Chairman of the Program Committee, Theodore L. Badger, M.D., care of Massachusetts Medical Society, 22 the Fenway, Boston 15. Applications for space in the Scientific Exhibit are now available and will be sent on request. Exhibits will supplement the lectures as far as possible and should portray subjects of a broad general interest. Requests for applications should be sent to: Secretary, Council on Scientific Assembly, American Medical Association, 535 N. Dearborn St., Chicago.

PHYSICIANS WHO MOVE

Letters have been received from physicians inquiring about what happens to their A. M. A. membership when they move from one state to another. To clarify the matter, Mr. George Hall, Secretary of the A. M. A. Council on Constitution and By-Laws, prepared the following memo:

"Prior to last June, a physician who, for any one of a number of personal reasons, found it advisable to move his practice from one state to another was allowed only six months to become a member of the new constituent society before running the risk of losing his A. M. A. membership. Since many component societies have waiting periods of one year, and sometimes more, it became virtually impossible for a physician to join a new constituent society within the six months' period. In recognition of this situation, the House of Delegates amended Chapter II, Section 2, of the By-Laws in June, 1954, to permit a member's name to be continued on the membership roster of the A. M. A. for a period of two years. This added time should obviate loss of A. M. A. membership in all but the most extreme cases.

"Although the By-Laws do not spell out administrative detail, the Secretary's Office would remind physicians moving from one state to another that they must pay their A. M. A. dues during the two year transfer period. Forfeiture of A. M. A. membership for non-payment of dues is provided for in another Section of the By-Laws and was affected by the change in Chapter II, Section 2. Such dues may be paid directly to the A. M. A. Secretary's Office since no constituent society membership exists through which they may be forwarded."

FEDERAL MEDICAL LEGISLATION

Eighth Installment, First Session, 84th Congress

Practical Nurses' Training

Senators Hill (D., Ala.), Murray (D., Mont.), McNamara (D., Mich.), Lehman (D., N. Y.), and Neely (D., W. Va.), members of the Labor and Public Welfare Committee, propose, in S. 929, to amend the Vocational Education Act of 1946 to establish a training program for practical nurses and auxiliary hospital personnel under the U. S. Commissioner of Education in the Department of Health, Education, and Welfare. The bill sets the standards for states to follow in training and supervision and provides for an advisory council of 6 to 10 members, one of whom must be a physician. State plans for training would require the approval of the U. S. Commissioner of Education. State allotments would be decided by a per capita-income-population formula, insuring relatively more assistance to low-income states. The program on a state level would be administered by the state board of vocational education. No matching funds would be required from the states until July 1, 1957, when a 25% state or local contribution would be required. Beginning July 1, 1959, the government would pay half the cost. If not used, the funds could be carried over for a year. The bill would authorize an appropriation of 5 million dollars for the first year. This bill was referred to the Committee on Labor and Public Welfare.

The Federal Legislation was prepared by the Washington Office of the American Medical Association.

Social Security

Removing Limitations on Outside Income.—Senator Bender (R., Ohio) has introduced, in S. 999, a measure which would remove the limitations on outside income any individual may earn while receiving Old-Age and Survivor's Insurance benefits. Under the present law the outside earnings are restricted to $1,200 per year from ages 65 to 72 if the individual is to receive OASI benefits. This measure is identical with H. R. 27 by Canfield (R., N. J.), previously reported, and essentially similar to H. R. 3465 by Congressman Radwan (R., N. Y.), H. R. 2168 by Congressman Ostertag (R., N. Y.), and H. R. 3006 by Congressman Yates (D., Ill.). The House measures were referred to the Committee on Ways and Means, and the Senate measure was referred to the Committee on Finance.

Social Security for All.—Congressman Blatnik (D., Minn.), in H. R. 4471, and Congressman Gubser (R., Calif.), in H. R. 4472, propose to substitute for the present Social Security law measures that would require individuals or companies to pay to the federal government 2% of their gross income derived from any or all sources, except that in personal incomes there would be an exception of $250 per month. From the resultant fund, matched yearly with tax funds, persons over 60, persons between 18 and 60 when disabled over six months, and unemployed widows with a child under 18 would receive incomes from this fund. The bill does not state how the disability would be determined. These bills are similar to H. R. 852 by Van Zandt (R., Pa.) in this Congress and H. R. 2446 by Angell (R., Ore.), H. R. 2447 by Secrest (D., Ohio), and H. R. 3105 by Van Zandt (R., Pa.) in the last Congress. These bills were referred to the Committee on Ways and Means.

Private Benefit Plans in Lieu of Social Security.—Congressman Curtis (R., Mo.), by H. R. 3890, would authorize a waiver of Old-Age and Survivor's Insurance payroll taxes for an individual participating in a private insurance benefit and/or retirement plan. The benefits of the private plan would have to be at least equal to Old-Age and Survivor's Insurance benefits to which the individual would be entitled. The cash surrender value of the private plan would have to equal the payroll taxes that would have been paid to the OASI plan. If the individuals cease to participate in the private plan the insurer would have to pay into the OASI fund the taxes that would have been paid had the individual not been in the private plan. This measure was referred to the Committee on Ways and Means.

Compulsory Social Security for Dentists.—Senator Bender (R., Ohio), in S. 1344, Congressman Schenck (R., Ohio), in H. R. 4619, and Congressman Van Zandt (R., Pa.), in H. R. 4752, would extend coverage under the federal Old-Age and Survivor's Insurance system to include dentists (but not physicians) on a compulsory basis. The Senate measure was referred to the Committee on Finance and the House measures to the Committee on Ways and Means.

Compulsory Social Security for Lawyers.—Congressman Van Zandt (R., Pa.), in H. R. 855, and Congressman King (D., Calif.), in H. R. 4574, would amend the Social Security Act to extend the federal OASI system to make coverage compulsory for persons engaged in the practice of law. These measures were referred to the Committee on Ways and Means.

Voluntary Social Security Coverage for Physicians and Dentists.—Congressman Reuss (D., Wis.) proposes, in H. R. 4957, to amend the Social Security Act to make social security coverage voluntary for physicians and dentists. Once social security has been elected the election would be irrevocable. The effective date would be Jan. 1, 1956. This measure was referred to the Committee on Ways and Means.

Total Disability Insurance.—Congressman Byrd (D., W. Va.), in H. R. 4834, would amend the Social Security Act to provide disability insurance benefits equivalent to the primary insurance to a person eligible under social security who becomes physically and totally incapacitated before retirement age. He would receive monthly benefits after six months of disability. This bill was referred to the Committee on Ways and Means.

MEDICAL NEWS

ARIZONA

State Medical Meeting in Tucson.—The 64th annual meeting of the Arizona Medical Association will convene at the Hotel El Conquistador, Tucson, May 4-7, under the presidency of Dr. Oscar W. Thoeny, Phoenix. A symposium on glaucoma has been scheduled for 2 p. m., Thursday. Friday morning Drs. George C. Griffith, Los Angeles, and Robert W. Oblath, North Hollywood, Calif., will present a symposium, "Complications of Myocardial Infarction: Prevention and Management." Other presentations by out-of-state speakers include:

Factors in the Differential Diagnosis Between and the Treatment of Extrinsic and Intrinsic Asthma, Stanley F. Hampton, St. Louis.
Spinal Anesthesia Can Be Safe, Nevin H. Rupp, Los Angeles.
Current Status of Coccidioidal Infection, Charles E. Smith, Berkeley, Calif.
The Ethical, Personal and Professional Obligations of the Physician, Louis J. Regan, Los Angeles.
Aging Lungs, William H. Oatway Jr., Altadena, Calif.
Study of Stress Reactions Following Orthopaedic Operations and Injuries upon the Bones and Joints, Philip D. Wilson, New York.
Pediatric Poisoning, Robert H. Alway, Denver.
New Light on the Etiology of Gastric and Duodenal Ulcer, Lester R. Dragstedt, Chicago.
Ocular Signs of Endocrine Exophthalmos, Michael J. Hogan, San Francisco.
Present Status of Tracheotomy, Walter P. Work, San Francisco.
The 1955 Look at Problems of Rheumatoid Arthritis, Richard H. Freyberg, New York.
A Consideration of the Drugs Used in the Treatment of Duodenal Ulcer, Carl A. Dragstedt, Chicago.

The annual handicap golf tournament (stag) will be held Saturday, 10 a. m., at the El Rio Golf and Country Club, West Speedway, Tucson. The Arizona Society for Crippled Children will have a program open to the public Saturday afternoon. The president's dinner-dance Saturday, 7:45 p. m., will be preceded by a reception. The woman's auxiliary to the Arizona Medical Association will hold concurrent meetings.

ARKANSAS

Meeting of Pathologists.—A joint meeting of the South Central Region, College of American Pathologists, and the Arkansas Society of Pathologists will be held in Little Rock, May 7. The morning session will be devoted to a slide seminar conducted by Drs. Albert C. Broders, Temple, Texas, and William R. Mathews, Shreveport, La. In the afternoon "Cytology, Its Place in Pathology" will be presented by Dr. Cyrus C. Erickson, Memphis, Tenn., and "Carcinoma in Situ" by Dr. James P. Dewar, Oklahoma City. At 4 p. m. there will be a tour of the new medical center and at 7 p. m. dinner, with Dr. Merlin J. Kilbury, Little Rock, as host.

CALIFORNIA

Meeting of Chest Physicians.—The California chapter of the American College of Chest Physicians will meet at the Sheraton-Palace Hotel, San Francisco, April 30. All physicians are invited to attend the scientific program, which will open at 2 p. m. with "New Experimental Surgical Methods for the Correction of Myocardial Ischemia," followed by "Direct Spatial Vectorcardiography: The Clinical Applications," "Problems in Bronchial Drainage," and "The Effect of Cortisone on the Irradiation Reaction of the Lung." The sessions will close with a panel on tuberculosis, followed by questions from the floor. There will be a cocktail hour at 5:30 p. m. to which ladies are invited.

Pathologists Meet in San Francisco.—The California Society of Pathologists will meet in San Francisco, April 30-May 4 at the Sheraton-Palace Hotel, where an all-day slide conference on gynecologic tumors (CMA Cancer Commission) will be presented Saturday. Dr. H. Russell Fisher, Pasadena, president of the society, will be chairman and Dr. Dominic A. DeSanto, San Diego, moderator. At the dinner "Medicine and Hospitals in Western Europe" will be considered by Mr. George U. Wood, executive vice-president, Peralta Hospital, Oakland. Sunday morning will be devoted to a joint meeting with the section on radiology, in the Civic Auditorium. The session will consist of case presentations and panel discussion.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

CONNECTICUT

Association of Tumor Clinics.—The spring meeting of the Connecticut Association of Tumor Clinics will be held at the Norwalk Hospital, May 5, 4 p. m. The speakers will be Dr. Harold W. Dargeon, attending pediatrician, Memorial Center for Cancer and Allied Diseases, New York, who will discuss "Cancer in Children," and Dr. Emerson Day, director, Strang Prevention Clinic at the center, whose topic will be "Detection of Early Cancer in Office Practice."

Guest Speakers at Hartford Hospital.—In its guest speaker program, Saturdays, 11 a. m., the Hartford Hospital presents Dr. Philip M. Stimson, associate professor of clinical pediatrics, Cornell University Medical College, New York, "Recent Development in Poliomyelitis," May 7; Dr. Levin L. Waters, associate professor of pathology, Yale University School of Medicine, New Haven, "The Pathology of Arteriosclerosis," May 14; Dr. Fiorindo A. Simeone, professor of surgery, Western Reserve University School of Medicine, Cleveland, "The Study and Treatment of Peripheral Arterial Disease," May 21; and Prof. J. A. V. Butler, professor of chemistry, University of London, London, England, "Radiation Research," May 28.

DISTRICT OF COLUMBIA

Lecture by Dr. Gold.—The Psi chapter of Phi Delta Epsilon fraternity at the George Washington University School of Medicine, Washington, D. C., will hold its eighth annual lectureship May 7 at 12 noon. The guest lecturer will be Dr. Harry Gold, department of pharmacology, Cornell University Medical College, New York, who will discuss "The Management of Congestive Heart Failure."

Hospital Centennial.—Saint Elizabeths Hospital, Washington, D. C., which is observing its 100th anniversary this year, will be the meeting place May 5-6 of psychiatrists and other authorities on mental illness from the United States, South America, and abroad. Dr. Winfred Overholser, superintendent of Saint Elizabeths, will preside at the meetings. Participants will include Dr. Arthur P. Noyes, Norristown, Pa., president, American Psychiatric Association and formerly first assistant physician at Saint Elizabeths; Dr. Nolan D. C. Lewis, Skillman, N. J.; Dr. Henry W. Brosin, Pittsburgh; Dr. Alfred H. Stanton, Wellesley Hills, Mass.; Gardner Murphy, Ph.D., Topeka, Kans.; Dr. G. Ronald Hargreaves, director of the mental health division of the World Health Organization, Geneva, Switzerland; Dr. Paul D. Sivadon, director of mental hospitals, Department of the Seine, France; and Dr. Honorio F. Delgado, director of the department of neuropsychiatry, University of San Marco, Lima, Peru. Dr. Gregory Zilboorg, New York, will address the dinner meeting at the Willard Hotel, Friday. The program will include an historical pageant depicting the life and works of Miss Dorothea Lynde Dix, whose efforts were largely responsible for the founding of the hospital in 1885. Physicians and members of related professions are invited to attend.

GEORGIA

State Medical Meeting.—The 105th annual session of the Medical Association of Georgia will be held at the Bon Air Hotel in Augusta, May 1-4 under the presidency of Dr. Peter B. Wright, Augusta. Sunday afternoon has been reserved for specialty section programs, to which all physicians are invited. At 2:15 p. m. there will be a joint section meeting on pediatrics and

obstetrics and gynecology, which will include presentation of "Cytomegalic Inclusion Body Disease in Newborn Infants" by Dr. Edith L. Potter, Chicago. This lecture, sponsored in honor of the late Dr. W. A. Mulherin by Mr. Edward E. Rader, Baker Laboratories, will be followed by "Management of Obstetrical Difficulties with Relation to Fetal Outcome" by Dr. F. Bayard Carter, Durham, N. C. Dr. Potter and Dr. Carter will also participate in a panel, "Important Factors in Perinatal Mortality," Monday at 8 a. m. Dr. Gould A. Andrews, Oak Ridge, Tenn., will present "Radioactive Isotopes in Medical Research" during the medicine and heart joint section meeting. The concluding lecture at the joint section meeting on orthopedics and radiology, "Radiation Therapy in Bone Malignancy," will be delivered by Dr. Richard H. Chamberlain, Philadelphia, who on Monday will open the meeting of the radiology section at 2:30 p. m. with "Practical Application of Isotopes in Medicine." Dr. Ted F. Leigh, Atlanta, will serve as moderator for a film-reading session Sunday at 4:30 p. m. The house of delegates, meeting at 5 p. m., will hear Dr. George F. Lull, Secretary-General Manager of the American Medical Association, deliver an address entitled "It's Your American Medical Association." The delegates will meet jointly with the woman's auxiliary, which is holding its sessions concurrently with those of the parent organization.

Monday has been designated G. P. Day. The panel, "Important Factors in Perinatal Mortality," at 8 a. m., will be followed by "Disability Evaluation for General Practitioners" by Dr. Earl D. McBride, Oklahoma City, after which there will be a panel on radioactive isotopes in medicine. Dr. McBride is also scheduled to address the industrial surgery section Tuesday at 10:40 a. m., his topic being "Standardizing Medical Evaluation of Industrial Disability." At 11:35 a. m. Monday, addresses of welcome will be made by the Hon. Hugh L. Hamilton, mayor of Augusta, and Dr. Clinton M. Templeton, Augusta, president, Richmond County Medical Society. Dr. Elmer Hess, Erie, Pa., President-Elect of the American Medical Association, will then deliver an address on the American Medical Association immediately preceding the president's address at 12 noon. Dr. Hess will also address the urology section at 2:30 p. m., his topic being "Management of Cancer of the Bladder." The afternoon session will open at 2:30 p. m. with "Problems in the Diagnosis and Treatment of Chronic Pancreatitis," by Dr. Champ Lyons, Birmingham, Ala., after which "The Scope of Anesthesia in Office Practice" will be considered by Dr. Stuart C. Cullen, Iowa City. Dr. Cullen is scheduled to address the anesthesiology section Tuesday, 2:30 p. m., when he will present "Recent Advances in the Use of Analgesics." At 3:30 p. m. Monday Dr. Edith H. Lincoln, New York, will give "Indications for Antimicrobial Therapy of Tuberculosis in Children" and, at 9:30 a. m., Tuesday, will discuss the results of antimicrobial therapy of tuberculosis in children before the thoracic diseases section. At 4 p. m., Monday, Dr. John R. Fowler, Barre, Mass., president, American Academy of General Practice, will discuss the philosophy of office procedure. Tuesday will be devoted to specialty section programs. At 9:30 a. m. the surgery and anesthesiology joint section will present a panel, "Factors Influencing Morbidity and Mortality in the Surgical Patient," with Dr. Perry P. Volpitto, Augusta, as moderator, and Drs. Lyons, Cullen, and Julian K. Quattlebaum, Savannah, and David A. Davis, Chapel Hill, N. C., as speakers. Dr. Davis will also appear before the meeting of the anesthesiology section, 3:30 p. m., to talk on carbon dioxide poisoning. The subject of the panel to be presented by the industrial surgery section at 8:30 a. m. Tuesday is "Fees for Medical Services Rendered in Industrial Accidents." The thoracic diseases section will present a panel, "Chemotherapy of Tuberculosis," Tuesday at 10 a. m., for which Mrs. Shirley Ferebee, United States Public Health Service, Washington, D. C., will be one of the speakers. At 12 noon Dr. Frank B. Berry, assistant secretary of defense, Washington, D. C., will deliver the Abner Wellborn Calhoun Memorial Lecture, "The Medical Manpower Situation in This Country and Overseas." The pathology section, meeting at 2:15 p. m., will have as a guest speaker Dr. Russell S. Fisher, Baltimore, who will discuss medicolegal investigations and will participate in a panel on legal medicine and medical examiners.

ILLINOIS

Fellowship in Pediatric Neurology.—A fellowship in pediatric neurology is available in the Children's Division of the Cook County Hospital under the auspices of the Dr. Julian D. Levinson Memorial Research Foundation; stipend, $5,000 per year. For information, contact Dr. Abraham Levinson at Cook County Hospital, 1825 W. Harrison St., Chicago 12.

Chicago

Zeit Memorial Lecture.—The 12th annual F. Robert Zeit Memorial Lecture sponsored by the undergraduates and alumni of Alpha Kappa Kappa at Northwestern University Medical School will be delivered at 4 p. m., May 4, in Thorne Hall on the Chicago campus. Dr. Maxwell M. Wintrobe, head, department of internal medicine, University of Utah School of Medicine, Salt Lake City, will discuss "Blood Production, Blood Destruction, the Spleen and Splenectomy."

Dr. Vollan Named Dean.—Dr. Douglas D. Vollan, who had served as assistant secretary of the Council on Medical Education and Hospitals of the American Medical Association since June, 1952, was appointed dean of the faculty of the Chicago Medical School, as of April 1. A veteran of World War II, Dr. Vollan served in the Navy as a lieutenant in the medical corps from 1944 to 1946. He also has the degree of Master of Public Health from the School of Public Health at Columbia University.

Lectures on Low-Sodium Diet.—Physicians are invited to send patients on a low-sodium diet or those who prepare meals for them to lectures and demonstrations in the auditorium of the Peoples Gas Building, 122 S. Michigan Ave., at 2 p. m. May 6-13. These lectures are part of a course sponsored by the Chicago Heart Association, Chicago Dietetic Association, Chicago Home Economics in Business, and Chicago Nutrition Association. Written referral is required, but reservations are not necessary.

KANSAS

State Medical Meeting in Hutchinson.—The Kansas Medical Society will hold its 96th annual meeting May 1-5 in Hutchinson under the presidency of Dr. Murray C. Eddy, Hays. The scientific sessions will open at the Sports Arena, northeast edge of Hutchinson, Tuesday at 9:15 a. m. with an address of welcome by Dr. Leland F. Glaser, Hutchinson, president of the Reno County Medical Society, after which the following presentations will be made by guest speakers:

Acute Medical Emergencies, Thomas Flint Jr., Richmond, Calif.
Gallbladder Disease, Philip Thorek, Chicago.
Liver Disease, William E. Ricketts, Park Forest, Ill.
Acute Surgical Emergencies, Frank F. Allbritten Jr., Kansas City.

Tuesday afternoon Dr. Edward H. Hashinger, Kansas City, will serve as moderator for a symposium, "How to Keep the Medical and Surgical Patient Alive," for which the participants will be the morning speakers. The following program will be presented Wednesday morning:

Functional Aspects of Heart Disease, Walter S. Priest, Chicago.
Gastrointestinal Functional Disorders, Thomas E. Machella, Philadelphia.
Psychosomatic Aspects of the Female Pelvis, Edward C. Hughes, Syracuse, N. Y.
Headaches, John M. Lyon, Denver.

In the afternoon the speakers at the morning program will participate in a symposium on functional disorders, for which Dr. Karl A. Menninger, Topeka, will serve as moderator. The eye, ear, nose, and throat section will have as guest speakers Drs. Theodore E. Walsh, St. Louis, and Frederick R. Carriker, Denver, each of whom will present four papers. The Kansas chapter, American Academy of General Practice, has scheduled a clinical pathological conference for its luncheon meeting Monday, 12:10 p. m. at the Baker Hotel. Dr. William J. Reals, Wichita, will serve as moderator, with Col. James A. Wier, M.C., Fitzsimons General Hospital, Denver, and Dr. Allbritten as participants. Colonel Wier and Dr. Allbritten will also participate in a round-table discussion at 3:45 p. m. following presentation of "Hernias" by Dr. Allbritten and "Diagnostic Approach to Pulmonary Disease" and "Diagnostic Significance

of Pulmonary Cavity" by Colonel Wier. The cocktail hour at 6 p. m. will precede the dinner at which Kenneth McFarland, Ph.D., Topeka, educational consultant for General Motors, will be the guest speaker.

The woman's auxiliary to the Kansas Medical Society will hold concurrent meetings. The annual banquet of the society will be held at the Hotel Baker, Wednesday, 7 p. m. On Monday preceding the meetings sports events will be held: the golf tournament of the Kansas Medical Golfing Association at 10 a. m. at the Prairie Dunes Country Club; practice shooting, scheduled by the Kansas Medical Skeet and Trapshooting Association at the Arkansas Valley Rod and Gun Club at 10 a. m. and competitive shooting at 1 p. m. Tournament banquet and awarding of prizes are scheduled for 6 p. m. at the Prairie Dunes Country Club.

KENTUCKY

Pediatric Postgraduate Course.—A postgraduate course in pediatrics will be presented by the department of pediatrics of the University of Louisville School of Medicine each Tuesday morning during May and part of June from 9:30 a. m. to 12:30 p. m. at Childrens Hospital, Louisville. Lecturers will include members of the pediatrics department and the following guest speakers: Dr. Daniel G. Costigan, instructor in orthopedic surgery; Dr. Adolph B. Loveman, associate professor of dermatology and syphilology; Dr. Hugh B. Lynn, assistant professor of surgery; Dr. Everett G. Grantham, associate professor of neurosurgery; and Dr. Robert Lich Jr., professor of urology and chief of the section on urology. This course has been approved for 24 hours formal credit for members of the American Academy of General Practice. There will be a registration fee of $20. For information, contact Dr. William W. Nicholson, 1947 Douglass Blvd., Louisville.

LOUISIANA

State Medical Meeting at New Orleans.—The 75th annual meeting of the Louisiana State Medical Society will convene at the Hotel Roosevelt, New Orleans, May 2-4 under the presidency of Dr. Walter O. Moss, Lake Charles. Drs. Vincent P. Collins, Houston, Texas, Edgar Hull, New Orleans, Louis S. Smith, Dallas, Texas, and Morton J. Tendler, Memphis, Tenn., will participate in a clinical pathological conference at the membership luncheon Tuesday, 12 noon. A special meeting for members and members of the woman's auxiliary, which will meet concurrently, is scheduled for Tuesday evening, 8 p. m. Mr. Leo E. Brown, Chicago, Director of Public Relations, American Medical Association, will discuss "Medicine and the Public Eye," and Dr. Joseph D. Martin, New Orleans, Louisiana State Department of Health, will present "Highlights of Public Health in Louisiana." During the Tuesday morning session Dr. Vernon B. Link, Atlanta, Ga., will have as his topic "A Century of Progress in the Control of Communicable Diseases," and Tuesday afternoon Dr. Herman Yannet, Southbury, Conn., will discuss "Management of the Mentally Retarded Child." The other out-of-state speakers, who will participate in the clinical pathological conference, will read papers during the general sessions. The dinner dance will be held Wednesday at the Hotel Roosevelt. The annual golf tournament is scheduled for Tuesday and Wednesday at the Metairie Country Club.

MASSACHUSETTS

Program for School Physicians.—In programs for school physicians, presented by the Massachusetts School Physicians' Association in cooperation with the Harvard School of Public Health and the Massachusetts Department of Public Health, a panel presentation on health needs of school-aged children has been scheduled for May 4, 2-4 p. m. in the lecture room of the Harvard School of Public Health, 55 Shattuck St., Boston. The moderator will be Dr. R. Gerald Rice, Boston, director, division of maternal and child health, Massachusetts Department of Public Health, and discussion will be by the members of the school of public health.

MICHIGAN

County Society Clinic.—The Medical Society of Ingham County will sponsor its 27th annual May Clinic May 5, at the Hotel Olds in Lansing. The following program will be presented at 2 p. m.:

Anesthetic Management in Acute Emergency Situations, Frederick H. Van Bergen, Minneapolis.
Combined Chemotherapy in Infectious Diseases, Wesley W. Spink, Minneapolis.
Surgical Management of Cancer, Owen H. Wangensteen, Minneapolis.
Complete Investigation of the Suspected Cervix, Allan C. Barnes, Cleveland.

A social hour, 5:15 p. m., will precede the subscription dinner at which "Primary Carcinoma of the Lung" will be discussed by Dr. Leo G. Rigler, professor of radiology, University of Minnesota Medical School, Minneapolis.

NEW JERSEY

Cardiological Symposium.—The medical profession is invited to attend the following symposium, "Structural Defects of the Heart," which will be presented by the Union County Heart Association at the Elizabeth Carteret Hotel in Elizabeth, May 4, 2-5 p. m.:

Mitral Defects—Medical Aspect, Laurence B. Ellis, Boston.
Mitral Defects—Surgical Aspect, Dwight E. Harken, Boston.
Congenital Defects, Helen Brooke Taussig, Baltimore.

Dedication of Lewis Library.—The Nolan D. C. Lewis Library, recently donated to the New Jersey Neuro-Psychiatric Institute, Princeton, will be dedicated on May 4, 2:30-4 p. m. Dr. Daniel Blain, Washington, D. C., medical director, American Psychiatric Association, will give observations on current trends in psychiatry, and Dr. Earl Bond, Philadelphia, past president of the association, will speak on psychiatry as depicted in books. Dr. Lewis will present the library with books, journals, scientific photographs, and reprints accumulated over a period of some 40 years. Some of the historical volumes bear dates of over a hundred years ago.

NEW MEXICO

Annual Medical Meeting in Albuquerque.—The 73rd annual meeting of the New Mexico Medical Society will be held in conjunction with the eighth Rocky Mountain Medical Conference, May 4-6, at the Hilton Hotel, Albuquerque. This conference is a joint enterprise of the New Mexico Medical Society, Colorado State Medical Society, Montana Medical Association, Utah State Medical Association, and the Wyoming State Medical Society. Dr. Stuart W. Adler, Albuquerque, president of the New Mexico Medical Society, will deliver the first address of welcome and will preside over the opening ceremonies and the Wednesday sessions, which will include the following presentations by out-of-state speakers:

The Anatomic Basis for Jaundice, Frank B. Queen, Portland, Ore.
Clinical Physiology of the Thyroid, Benjamin B. Wells, Omaha.
Surgical Treatment of Adenoma of the Thyroid—Single and Multiple, John deJ. Pemberton, Rochester, Minn.
New Light on the Etiology of Gastric and Duodenal Ulcers, Lester B. Dragstedt, Chicago.

At 6:30 p. m. the Bernalillo County Medical Society, of which Dr. Louis A. McRae, Albuquerque, N. Mex., is president, will sponsor a smoker and entertainment at the Fez Club. Dr. John J. Malee, Anaconda, Mont., president, Montana Medical Association, will preside over the Thursday morning session at which the presentations will include "Current Status of Anticoagulant Therapy," by Dr. William T. Foley, New York; "Mucocutaneous Ocular Syndromes," by Dr. Phillips Thygeson, San Jose, Calif.; "Some Physiologic Variables in Hypothermia," by Col. Harvey C. Slocum, M.C., Washington, D. C. The out-of-state speakers will participate in the surgical and medical round-table luncheons at noon. Dr. Bernard J. Sullivan, Laramie, president, Wyoming State Medical Society, will preside at the Thursday afternoon session, which will include "Treatment of Primary Carcinoma of the Breast," by Dr. L. Henry Garland, San Francisco; "Sex Definition in Children," by Dr. Merl J. Carson, Los Angeles; and a panel discussion on thyroid disease. A social hour at 6:30 p. m. will precede the banquet at the Alvarado Hotel. Presiding over the Friday morning session will be Dr.

Charles Ruggeri Jr., Salt Lake City, president, Utah State Medical Association. At 10:45 a. m. a panel discussion on jaundice disease will follow presentations by out-of-state speakers. Surgical and medical round-table luncheons will be held at 12 noon. Friday afternoon Dr. Samuel P. Newman, Denver, president, Colorado State Medical Society, will preside at a program by four of the guest speakers.

NEW YORK

Teaching Day on Office Practice.—An all-day symposium, "Practical Therapeutics and Office Procedures for the General Practitioner," will be presented by the Brooklyn Academy of General Practice, May 4, at the Hotel Granada, Brooklyn, under the sponsorship of Lederle Laboratories. The program, which is open to all general physicians of Brooklyn and is approved for AAGP credit, will include the following presentations by out-of-state speakers:

Walter C. Alvarez, Chicago, Gastroenterology.
William Likoff, Philadelphia, Cardiology.
Leo H. Criep, Pittsburgh, Management of Asthma.
Alejandro F. Castro, Washington, D. C., Office Proctology.
Edmund R. Novak, Baltimore, Office Gynecology.
Oliver E. Van Alyea, Chicago, Management ENT Problems.

Conference on Rehabilitation.—"How the Compensation Insurance Company May Make the Most of Rehabilitation" is the theme of the Fourth Annual Conference for Compensation Insurers and Physicians at the Institute for the Crippled and Disabled, 400 First Ave., New York City, May 4. During the luncheon session, over which Mr. Bruce Barton, president of the institute, will preside, the Hon. Angela R. Parisi, chairman of the New York State Workmen's Compensation Board, will be the principal speaker. The morning session, beginning at 9 a. m., will feature a presentation on stage and on color film, showing the full mobilization of a community's resources in the rehabilitation of a representative industrial accident case. A panel discussion and forum will follow. A new institute service to insurers, the specialized placement of compensation claimants, will be announced and dramatized during the morning session. Tours of the institute's rehabilitation facilities will be conducted. Those wishing to attend are invited to contact the Director, Mr. Willis C. Gorthy, Institute for the Crippled and Disabled, 400 First Ave., New York 10. Attendance will be limited to 350, and tickets will be issued on a first-come first-serve basis. There is no charge for the meeting.

Child Research Clinic.—The Woods Schools of Langhorne, Pa., in collaboration with the department of special education, Teachers College, Columbia University, and the School of Education, the City College, New York, will present a conference of the Child Research Clinic, May 6-7, on "The Exceptional Child Faces Adulthood." The Friday session will be held at 8 p. m. in the McMillin Theatre Auditorium of Columbia University. The keynote speaker, Maurice H. Fouracre, Ph.D., head of the department of special education, Teachers College, Columbia University, will discuss "Adjusting the Exceptional Adolescent to Adult Life" and Salvatore G. DiMichael, Ph.D., executive director, National Association for Retarded Children, New York, will present "The Problem of Post-Adolescence." The second session will be held Saturday morning in the Corpus Christi Auditorium, Broadway and 121st St., where Dr. Herman Yannet, medical director, Southbury Training School, Southbury, Conn., will have as his subject "The Exceptional Child Becomes the Exceptional Adult—Problems of Management Incident to Increasing Age." His address will be preceded by "Changing Attitudes Toward the Mentally Handicapped" by Mr. Ernest N. Roselle, superintendent, Southbury (Conn.) Training School, and will be followed by "Occupational Adjustment" by Mr. James F. Garrett, chief, Division of Program Services, Office of Vocational Rehabilitation, Washington, D. C. The Saturday afternoon session at Horace Mann Auditorium, Broadway and 120th St., will be devoted to a panel discussion "Planning for Social Adjustment."

New York City

Dr. Huggins to Address Cancer Society.—At its dinner meeting, May 3 (open to members only), the New York Cancer Society will hear Dr. Charles B. Huggins, director, Ben May Laboratories for Cancer Research, University of Chicago, discuss "Present Status and Future Horizons in Cancer Research."

Ewing Memorial Lecture.—At its meeting, May 5, 8:30 p. m., the New York Academy of Medicine will present the 10th James Ewing Memorial Lecture, "The Treatment of Primary and Metastatic Tumors in the Liver," by Dr. George T. Pack, attending surgeon, Memorial Center for Cancer and Allied Diseases, and associate professor of clinical surgery, Cornell University Medical College.

Conference on Cataract.—The New York Society for Clinical Ophthalmology will present a round-table conference on cataract May 2, 8 p. m., in the New York Academy of Medicine Building, 2 E. 103rd St. The moderator will be Dr. Frederick H. Theodore and the panel of discussers, Drs. John G. Bellows, Chicago; Ray K. Daily, Houston, Texas; John M. McLean, New York; and Harvey E. Thorpe, Pittsburgh. The medical profession is cordially invited.

Bancroft Lecture in Surgery.—The seventh annual Frederic W. Bancroft Lecture in Surgery, sponsored by the Beth David Hospital Alumni Association, will be delivered by Dr. George T. Pack, attending surgeon, Pack Medical Group, at 8:30 p. m., May 4, at Beth David Hospital, 161 E. 90th St. Dr. Pack, who is attending surgeon at the Memorial Center for Cancer and Allied Diseases, and associate professor of clinical surgery at Cornell University Medical College, will have as his subject "Cancer of the Stomach."

NORTH CAROLINA

Fellowship in Neurosurgery.—The Raymond C. Henyan fellowship at Duke University School of Medicine, Durham, which is part of a large research project in neurosurgery at Duke under the direction of Dr. Barnes Woodhall, has been renewed for 1955.

State Meeting in Pinehurst.—The 101st annual session of the Medical Society of the State of North Carolina will convene at the Carolina Hotel, Pinehurst, May 2-4 under the presidency of Dr. Zack D. Owens, Elizabeth City. Postgraduate instructional courses have been scheduled for Sunday afternoon and all day Monday. A symposium on trauma will be presented at 2 p. m., Sunday; a symposium on gallbladder disease at 10 a. m., Monday; a panel discussion on problems related to obstetrics and gynecology at 3 p. m., Monday; and panel discussion on problems in pediatrics at 4 p. m. At 8:20 a. m., Tuesday, a breakfast for officers of state and county societies will be addressed by Mr. Thomas Hendricks, Secretary, Council on Medical Service, American Medical Association, Chicago, who will discuss "Progress in Medical Services." The general sessions will open at 9:10 a. m. At 9:40 a. m. Dr. Hugh H. Hussey, associate professor of medicine, Georgetown University School of Medicine, Washington, D. C., will consider "Recognition of Pulmonary Embolism." "Poliomyelitis—Control Measures" by Dr. Hart E. Van Riper, New York, medical director, National Foundation for Infantile Paralysis, will precede an address at 11 a. m., "The A. M. A. and Its Services and Responsibilities," by Dr. Walter B. Martin, Norfolk, Va., President of the American Medical Association, which will be followed by "Median Neuritis: Corpal Tunnel Syndrome: Diagnosis and Treatment" by Dr. J. Grafton Love, chief of the neurosurgical department, Mayo Clinic, Rochester, Minn. The general session Wednesday morning will be addressed by Dr. George F. Lull, Secretary and General Manager, American Medical Association, Chicago, on "This Is Your A. M. A." The scientific sessions will close Wednesday with the address, "Carcinoma of the Lungs," by Dr. Otto C. Brantigan, professor, thoracic and clinical surgery, University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore. The president's dinner is scheduled for Tuesday, 7 p. m., and at 8:30 p. m. Dr. Karl B. Pace, Greenville, N. C., A. M. A. General Practitioner of the Year 1954-1955, will be presented to the assembly. At 8:40 p. m. an address will be delivered by Dr. Louis A. Krause, clinical professor of medicine, University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore.

The section on practice of medicine and surgery has scheduled a panel, "Infections of the Heart—Diagnosis and Treatment," Tuesday, 2:30 p. m., with Dr Hussey as moderator. The section on pediatrics, meeting Tuesday afternoon, will have as guest speaker Dr. Conrad M. Riley, the Babies Hospital, Columbia-Presbyterian Medical Center, New York, whose topic will be "The Use and Abuse of ACTH and Cortisone in Pediatric Practice." Panel discussion on complications of peptic ulcer has been scheduled by the section on surgery for Wednesday, 2:30 p. m., with Dr. Felda Hightower, Winston-Salem, as moderator. During the meeting of the section on radiology Wednesday afternoon, Dr. Everett F. Hurteau, Akron, Ohio, will discuss "Interbody Fusion." Dr. G. Grady Dixon, Ayden, president of the North Carolina State Board of Health, will preside over a joint session of his organization and the Medical Society of the State of North Carolina Wednesday, 11:30 a. m. The auxiliary to the Medical Society of the State of North Carolina will hold concurrent meetings.

NORTH DAKOTA

Dr. Saiki Honored.—Dr. Arthur K. Saiki, professor of pathology, University of North Dakota School of Medicine, Grand Forks, was guest of honor at the December meeting of the Grand Forks District Medical Society, which paid tribute to his 25 years of service at the university.

State Medical Meeting in Bismarck.—The annual meeting of the North Dakota State Medical Association will convene at the Hotel Prince in Bismarck, May 2-3 under the presidency of Dr. P. H. Woutat, Grand Forks. The session will open at 9:30 a. m., Monday, with greetings by Norman Brunsdale, governor of North Dakota, and Evan Lips, mayor of Bismarck, after which Dr. John G. Freeman, Jamestown, will talk on facilities at the Jamestown State Hospital; Dr. William T. Peyton, Minneapolis, will discuss "Surgery for Relief of Pain"; Dr. Ford K. Hick, Chicago, will consider "Selection of Cases for Armchair Treatment of Coronary Thrombosis"; and Dr. E. Perry McCullagh, Cleveland, will present "Choice of Treatment in Hyperthyroidism." Frank G. Dickinson, Ph.D., Chicago, Director, A. M. A. Bureau of Medical Economic Research, will open the afternoon meeting with "Pensions for Self-Employed Physicians." Dr. Walter F. Kvale, Rochester, Minn., will have as his subject "Diagnosis and Treatment of Occlusive Abdominal Aortic Disease and Abdominal Aortic and Popliteal Aneurysms." At 3:30 p. m. Dr. Owen H. Wangensteen, Minneapolis, will deliver the inaugural E. P. Quain Lecture in Surgery, "Current Accomplishments in the Bowel Obstruction Problem." The Monday session will end with a panel discussion, "Treatment of Hypertension," by Drs. Kvale, Hick, and Peyton. The television program Monday evening will include (1) "Carcinoma of the Lung Problem" and (2) brief presentation of some medical economic problems by Dr. Dickinson. Papers by out-of-state speakers on Tuesday will include:

Psychiatric Aspects of Dysmenorrhea, Irving C. Bernstein, Minneapolis.
Certain Aspects of Carcinoma of the Stomach, Malcolm B. Dockerty, Rochester, Minn.
Use and Abuse of Fluoroscopy, Laurence L. Robbins, Boston.
Avoidance and Treatment of Postoperative Lung Complications, Francis M. Woods, Brookline, Mass.
Some Misconceptions About the Eyes, Malcolm A. McCannel, Minneapolis.

The sessions will close with panel discussion on carcinoma of the lung by Drs. Woods, Robbins, and Dockerty.

OHIO

Joseph Freedman Lectures.—On May 7-8 Dr. Felix G. Fleischner, associate clinical professor of radiology, Harvard Medical School, and director, department of radiology, Beth Israel Hospital, Boston, will deliver the seventh annual Joseph Freedman Lectures in Diagnostic Roentgenology at the University of Cincinnati College of Medicine, Cincinnati. Radiologists desiring to attend are requested to write Dr. Benjamin Felson, X-Ray Department, Cincinnati General Hospital, Cincinnati 29, for details.

Alumni Reunion.—The Ohio State University College of Medicine, Columbus, will hold a reunion on the campus, May 6-7, of the classes of 1910, 1915, 1920, 1925, 1930, 1940, 1945, and 1950; the class of 1935 will hold its reunion earlier in Cincinnati. On Friday there will be a tour of the University hospital and the Health Center. In the afternoon a scientific program in Starling-Loving Hall will precede a faculty reception. Saturday morning Dr. Robert M. Zollinger, chairman, department of surgery, and Dr. Bruce K. Wiseman, chairman, department of medicine, will conduct grand rounds.

OKLAHOMA

Meeting of Medical Assistants.—The Oklahoma State Medical Assistants Society will meet at the Hotel Tulsa in Tulsa May 6-8. Dr. Elmer Hess, Erie, Pa., President-Elect, American Medical Association, will be the dinner speaker on Saturday at 7 p. m., when his subject will be "The Doctor's Assistant." Other physicians who will participate in the meeting are Dr. Winfred A. Showman, Tulsa, and Drs. John F. Burton and Leo J. Starry, Oklahoma City.

PENNSYLVANIA

Postgraduate Seminar.—The Montour County Medical Society announces that its next postgraduate seminar will be held at the Geisinger Memorial Hospital, May 5. Guest speakers for the all-day session will be Dr. Gordon W. Douglas, professor, obstetrics and gynecology, Cornell University Medical College, New York; Dr. William L. Proudfit, Cleveland Clinic, Cleveland; and Dr. Jonathan T. Lanman, professor of pediatrics, New York University Medical School, New York.

Pittsburgh

Dental Health Conference.—"The Dental Health of Children—Whose Responsibility?" and "Insurance and Group Plans for Dental Care" will be the areas of discussion at the eighth annual Conference on Dental Health, sponsored jointly by the School of Dentistry of the University of Pittsburgh and the Odontological Society of Western Pennsylvania, May 4, in the Mellon Institute. Participants will include Drs. Samuel M. Wishik, professor of maternal and child health, Graduate School of Public Health of the university; Arthur G. Baker, Pittsburgh Department of Health; Morris A. Brand, medical director, Sidney Hillman Health Center, New York; and Leslie A. Falk, area medical administrator, United Mine Workers of America.

RHODE ISLAND

Hospital News.—Dr. William Bennett Bean, chairman, department of internal medicine, State University of Iowa College of Medicine, Iowa City, will serve as physician-in-chief pro tem at the Rhode Island Hospital, Providence, May 5-7.

Personal.—Dr. Charles J. Ashworth, Providence, a past president of the Rhode Island Medical Society, has been elected president of Physicians Service, the society's surgical-medical insurance plan, to succeed the late Dr. Joseph C. O'Connell. Dr. Orland F. Smith, Providence, was chosen treasurer to succeed Dr. Ashworth, who held that office since the inception of the program in 1949.

State Medical Meeting in Providence.—The 144th annual meeting of the Rhode Island Medical Society will be held May 4-5 at the Rhode Island Medical Society Library, Providence. The presidential address, "Meeting Our Pledges," will be delivered at 4:30 p. m., Wednesday, by Dr. Henri E. Gauthier, Woonsocket. The sessions will open at 2 p. m., Wednesday with "The Importance of Plasma Protein Abnormalities in Myelomatosis," by Dr. Herman A. Lawson, Providence, chief of medical service, Veterans Administration Hospital. "Diagnostic Significance of a Lump in the Neck" will be presented by Dr. Hayes Martin, New York; "Observations on Drug Therapy," by Dr. Dale G. Friend, Boston; and "Use and Abuse of Hormone Therapy," by Dr. Somers H. Sturgis, Boston. At 8:30 p. m. "Cryptorchidism" will be discussed by Dr. Charles C. Higgins, head, department of urology, Cleveland Clinic, and at 9 p. m. the Charles V. Chapin Oration, "Growth of Poliomyelitis Virus in Tissue Culture: Applications to Diagnosis and Prevention of Poliomyelitis," will be delivered by John F. Enders, Ph.D., chief, Research Division of Infectious Diseases, Children's Medical

Center, Boston, who was the recipient of the Nobel prize in Physiology and Medicine in 1954. On Thursday afternoon the following program will be presented:

Management of Children with Abdominal Pain, James M. Baty, Orvar Swenson, and Carroll Z. Berman, Boston.
Progress Notes on the Surgery of Acquired Heart Disease, Dwight E. Harken, Boston.
Neglected Aspects of the Tongue in Medical Practice, William B. Bean, Iowa City.

At the annual dinner Thursday "From Quonset to Quonset—1944-54" will be the subject of Rear Adm. John M. Hoskins, U. S. N., Commander Fleet Air Quonset, U. S. Naval Air Station, Quonset Point.

VIRGINIA

Lecture on Anesthesia.—The Alpha Mu chapter of Phi Delta Epsilon fraternity at the Medical College of Virginia, Richmond, will hold its sixth annual lectureship April 30. John C. Krantz Jr., Ph.D., professor of pharmacology at the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, the guest speaker, will discuss "Anesthesia—Consciousness and the Living Cell."

WISCONSIN

State Medical Meeting in Milwaukee.—The annual meeting of the State Medical Society of Wisconsin will be held at the Milwaukee Auditorium May 3-5 under the presidency of Dr. Arthur J. McCarey, Green Bay. The scientific sessions will open Tuesday at 9 a. m. with a discussion on the diagnosis and treatment of gastric ulcer, for which Dr. Leander J. Van Hecke, Milwaukee, will serve as moderator. Many of the round-table luncheons scheduled for each day will be led by out-of-state speakers, who will give the following presentations during the general sessions:

Role of Cortisone and Corticotropin in Gastrointestinal Disorders, Jacob A. Bargen, Rochester, Minn.
Rehabilitation of the Patient with Cardiovascular Disease, Joseph G. Benton, New York.
Proper Role of the Anesthesiologist in the Management of Pain, John J. Bonica, Tacoma, Wash.
Modern Management of the Hypertensive Patient, James A. Evans, Boston.
Periorbital Lesions, F. Bruce Fralick, Ann Arbor, Mich.
Shoulder Presentation, William F. Geittmann, Chicago.
Emergencies in the Newborn Period, Lee Forrest Hill, Des Moines, Iowa.
Investigation of the Unknown Dead, Charles P. Larson, Seattle.
Present Therapy of Benign and Malignant Breast Conditions, Herbert C. Lee, Richmond, Va.
Place of Image Amplifiers and X-Ray Movies in Radiology, Earl R. Miller, San Francisco.
Importance of Early Treatment of Injuries to Athletes, Don H. O'Donoghue, Oklahoma City.
Doctor-Patient Relationship, John Romano, Rochester, N. Y.
What Does Surgery Offer the Cardiac Patient? Harris B. Shumacker Jr., Indianapolis.
Unjustified Gynecological Operations, Richard W. TeLinde, Baltimore.
Fire and Explosion Hazards in Hospitals, and Their Control, George J. Thomas, Pittsburgh.
Adenomas and Hemorrhoids: Problems of Rectal Bleeding, Robert Turell, New York.
Esophageal Hiatus Hernia: Its Fate and Treatment, Ivan D. Baronofsky, Minneapolis.
Treatment of External Otitis, Ben H. Senturia, St. Louis.

The president's reception, Thursday, 5:30 p. m., will precede the annual dinner at the Hotel Schroeder.

HAWAII

Medical Meeting in Honolulu.—The 99th annual meeting of the Hawaii Medical Association will convene at the Mabel Smyth Building, Honolulu, May 5-8 under the presidency of Dr. Nils P. Larsen, Honolulu. The scientific sessions will open Thursday afternoon with the following program:

The History of Tuberculosis at Kalaupapa Settlement, Claude V. Caver, Honolulu.
Cardiac Arrhythmia Due to Mephenesin, Morton E. Berk and Arthur V. Molyneux, Honolulu.
Jaundice Due to Methyl Testosterone Therapy, Thomas S. Min, Honolulu.
Recognition and Handling of Eye Injuries in Emergencies, Clarence W. Trexler, Honolulu.

Thursday evening the movie, "Conization of the Cervix Uteri with a Simplified Technique," by Dr. Frank C. Spencer, Honolulu, at 7:30, will be followed by "Medical Uses of Radioactive Isotopes" by Dr. Jun-Ch'uan Wang, Honolulu; "Plasma Expanders," Dr. Edwin J. Pulaski, colonel, Medical Corps, U. S. Army, Washington, D. C.; "The Detection of Gastrointestinal Bleeding with a Barium-Hydrogen Peroxide Medium," Dr. George W. Henry, Honolulu; and "Therapeutic Considerations in the Hypochromic Anemias of Infancy and Childhood," Richard E. Ando, Honolulu. The scientific sessions will close Friday afternoon with the following presentations:

Closure of Perforations of the Ear Drum, Lup Q. Pang, Honolulu.
Management of Incarcerated Hernias in Infants and Children, George H. Nip, Honolulu.
The Scope of Plastic Surgery, Merton H. Mack, Honolulu.
Duodenal Atresia and Stenosis, Roy T. Tanoue, Honolulu.
Acid Phosphatase and Prostatic Cancer, Joseph H. Iwano, Honolulu.

The presidential address will be delivered at 7:30 p. m. Friday, after which a movie, "Nephrosis in Children," will be shown, and Dr. William M. M. Kirby, associate professor of medicine, University of Washington School of Medicine, Seattle, will discuss "Recent Advances in Antibiotic Therapy." Among the social events are the annual banquet and dinner at LeRoy's, 669 Ala Moana, Saturday evening; golfers' breakfast at the Oahu Country Club (courtesy of Pfizer Laboratories) Sunday morning, followed by the golf tournament for Hawaii Medical Association members; and a picnic Sunday, 12:30 p. m., for physicians and their wives at the home of Dr. and Mrs. Liljestrand, 3300 Tantalus Drive.

GENERAL

New Publication for Allergists.—The *International Archives of Allergy and Applied Immunology*, beginning with the issue of January, 1955, appears regularly on a monthly schedule. American authors should send their manuscripts for editorial consideration to the American editor-in-chief, Dr. William Kaufman, 540 Brooklawn Ave., Bridgeport, Conn.

Heart Association Invites Papers.—The American Heart Association, which will hold its annual meeting Oct. 22-26 at the Jung Hotel, New Orleans, announces that all those wishing to present papers must submit abstracts (not more than 300 words) in duplicate before July 1 to the Medical Director, American Heart Association, 44 E. 23rd St., New York 10. Abstracts should contain in summary form the results obtained and conclusions reached.

Hearing Week.—The annual National Hearing Week will be observed May 1-7 under the sponsorship of the American Hearing Society, 817 14th St., N. W., Washington 5, D. C. Cooperating in the campaign are 111 chapters of the society. The society supplies information and through its chapters provides scientific hearing tests, instruction in lip reading, auditory training, speech correction, assistance in the selection and use of hearing aids, instruction for preschool hard-of-hearing children and their parents, employment guidance, and recreational activities.

Association of American Physicians.—The 68th annual meeting of the Association of American Physicians will be held at Chalfonte-Haddon Hall, Atlantic City, N. J., May 3-4. The sessions will open Tuesday at 9:30 a. m. with an address by the president, Dr. Robert F. Loeb, New York. In all, 28 papers will be presented and 23 read by title. Wednesday at 9:30 a. m. the George M. Kober medal will be presented to Dr. William C. Stadie, Philadelphia. The association dinner is scheduled for 7:30 p. m., Tuesday. Dr. Oswald H. Robertson, Stanford, Calif., will deliver an address, "Science, Salmon and Trout."

Meeting on Clinical Research.—The American Federation for Clinical Research will meet May 1 at the Steel Pier Theater, Atlantic City, N. J. The presidential address will be delivered at 2 p. m. by Dr. William H. Beierwaltes, Ann Arbor, Mich. Single author presentations will include:

Autonomic Hyperreflexia and Its Control Following Cervical Spinal Cord Injury, Nathaniel B. Kurnick, Long Beach, Calif.
Effects of Digitalis and Anoxia on Potassium Transport in the Heart: Correlation with Electrocardiographic Changes, Hadley L. Conn Jr., Philadelphia.
Blood Volume in Patients with Laennec's Cirrhosis as Determined by Radioactive Chromium-Tagged Red Cells, Seymour Eisenberg, Dallas.

Forty-one persons will participate by invitation in the presentation of the 26 papers scheduled.

Tri-State Hospital Assembly.—Dr. Elmer Hess, Erie, Pa., President-Elect, American Medical Association, will speak at the Silver Anniversary Banquet of the Tri-State Hospital Assembly, Palmer House, Chicago, May 4, 7 p. m., on "Hospital-Physician Relationships." In the afternoon, a meeting of special interest to physicians is the Joint Conference of Medical Staff Members and Trustees in the Red Lacquer Room of the Palmer House, 3:45-5:45, with Dr. F. Lee Stone, Chicago, presiding and Dr. Josiah J. Moore, Chicago, as moderator. The speakers will include a trustee, a chief of medical staff, an administrator, an industrial physician, a lawmaker, and representatives of the police department, the coroner's office, and the Illinois Public Aid Commission. Dr. Malcolm T. MacEachern, Chicago, is chairman of the Tri-State Hospital Assembly, which will convene May 2-5 under the sponsorship of the hospital associations of Illinois, Indiana, Wisconsin, and Michigan, in which 36 sections and 75 organizations participate.

Rocky Mountain Medical Conference.—The sixth biennial meeting of the Rocky Mountain Medical Conference will be held at the Hilton Hotel in Albuquerque, N. Mex., May 4-6. The following guest speakers will appear on the scientific program: Drs. William T. Foley, New York; Merl J. Carson, Los Angeles; L. Henry Garland, San Francisco; Frank B. Queen, Portland, Ore.; John Pemberton, Rochester, Minn.; Benjamin B. Wells, Omaha; Phillips Thygeson, San Jose, Calif.; Lester R. Dragstedt, Chicago; and Col. Harvey C. Slocum, Washington, D. C. There will be panel discussions Thursday and Friday on jaundice and thyroid disease. The guest speakers will comprise the panel and will also present two papers each. The Bernalillo County Medical Society will be host to all visiting physicians at a stag smoker Wednesday evening. An informal dinner-dance is scheduled for Thursday evening. The physicians of the five state medical societies in the Rocky Mountain Conference are invited to attend the scientific sessions. There will be a $10 registration fee. Separate tickets will be sold for the dinner-dance and round-table luncheons.

Scholarship in Dermatology and Syphilology.—A three year scholarship in dermatology and syphilology is announced by Dr. Marion B. Sulzberger, professor and chairman of the department of dermatology and syphilology, New York University Post-graduate Medical School, a unit of New York University-Bellevue Medical Center. The scholarship, which pays $3,000 per annum, plus tuition, is open to graduates of approved medical schools who have completed one year of acceptable internship. Recipients will be selected on the basis of academic background and character. Applicants should include a transcript and other pertinent data from the medical school from which they graduated, a letter of recommendation from the dean, and one from the individual responsible for their internship. At least one other letter of recommendation is required. No applications will be accepted after May 31 for the class beginning Oct. 1. Applications should be sent to the Dean of the Postgraduate Medical School, 550 First Ave., New York 16.

Flying Physicians Meet in Chicago.—The Flying Physicians Association, established in 1954, announces that its first sectional meeting will be that of the Midwest chapter, May 7, at the Veterans Administration Research Hospital, 333 E. Huron St., Chicago. The following program will begin at 9:30 a. m.:

Physiological Problems in Altitude Flying, John P. Marbarger, Ph.D., research director, Aero-Medical Laboratory, University of Illinois College of Medicine, Chicago.

Chest Problems Related to Aviation Medicine, Stanford Sweany, staff physician, V. A. Research Hospital, Chicago.

Cardiac Problems Related to Aviation Medicine, Robert Gilbert, staff physician, V. A. Research Hospital, Chicago.

Medical Symposium—Wet Clinic.

Surgical Symposium—Wet Clinic.

Analysis of Causes for Light Airplane Accidents, C.A.A. Inspector, Chicago.

An address by Dr. George J. Kidera, Chicago, director, United Airlines Medical Department, 1-3 p. m., will be followed by demonstration of 11 planes, including a helicopter and equipment, and by a cocktail party by the Chicago Air Club at Meigs Field. If flying weather is bad, the meeting will be held anyway, and all physicians within driving distance are urged to attend. Co-chairmen of the meeting are Drs. Edward E. Avery and Lawrence A. Sadlek, Chicago.

American Psychosomatic Society.—The 12th annual meeting of the American Psychosomatic Society will be held at the Hotel Claridge, Atlantic City, May 4-5. Dr. Lawrence S. Kubie, New York, will deliver the presidential address at the close of the scientific sessions, Thursday, 3:15 p. m. The sessions will open Monday at 9 a. m. with a lecture, "Renal Excretion of Fluid and Electrolyte in Association with Vascular Headache," by Dr. William W. Schottstaedt, assistant professor of medicine, University of Oklahoma School of Medicine, Oklahoma City. Thursday at 9 a. m. Dr. Carlos Alberto Seguin, associate professor of psychiatry, University of San Marcos, and head of the psychiatric department, Hospital Obrero, Lima, Peru, will present "Migration and Psychosomatic Disadaptation," after which there will be a panel discussion on technical innovations in psychosomatic research. The film session Thursday afternoon will include "Emotional Preparation of Children for Surgery," "Hypnosis in Obstetrics," and "Behavior and Gastric Secretion: The Study of an Infant with a Gastric Fistula." The data in the last film will be discussed in the first paper of the afternoon session, which will be presented by Drs. Franz Reichsman, George L. Engel, and Harry L. Segal, Rochester, N. Y. The registration fee for nonmembers will be $5; for students, interns, residents, fellows, and those in full-time academic positions, $1.

MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

1955 Annual Meeting, Atlantic City, N. J., June 6-10.

1955 Clinical Meeting, Boston, Nov. 29-Dec. 2.

1956 Annual Meeting, Chicago, June 11-15.

1956 Clinical Meeting, Seattle, Nov. 27-30.

1957 Annual Meeting, New York, June 3-7.

AMERICAN ACADEMY OF TUBERCULOSIS PHYSICIANS, Ritz-Carlton Hotel, Atlantic City, N. J., June 4. Dr. Oscar S. Levin, P. O. Box 7011, Denver, Secretary.

AMERICAN ASSOCIATION FOR CLEFT PALATE REHABILITATION, Statler Hotel, Boston, May 13-14. Dr. Jack Matthews, 1617 Cathedral of Learning, University of Pittsburgh, Pittsburgh 13, Secretary.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS, Monterey Lodge, Monterey, Calif., May 22-25. Dr. John A. Taylor, 2 East 54th St., New York 22, Secretary.

AMERICAN ASSOCIATION OF THE HISTORY OF MEDICINE, Hotel Park Shelton, Detroit, May 12-14. Dr. Samuel X. Radbill, 7043 Elmwood Ave., Philadelphia 42, Secretary.

AMERICAN ASSOCIATION ON MENTAL DEFICIENCY, Statler Hotel, Detroit, May 24-28. Dr. Lloyd N. Yepsen, New Lisbon, N. J., Secretary.

AMERICAN ASSOCIATION FOR THE STUDY OF NEOPLASTIC DISEASES, Lord Baltimore Hotel, Baltimore, May 5-7. Dr. Bruce H. Sisler, P. O. Box 268, Gatlinburg, Tenn., Secretary.

AMERICAN COLLEGE OF ANGIOLOGY, Brighton Hotel, Atlantic City, N. J., June 4. Dr. Hugh Murphy, 151 East 83d St., New York, Secretary.

AMERICAN COLLEGE OF CARDIOLOGY, Hotel Biltmore, New York, May 19-21. Dr. Philip Reichert, 140 West 57th St., New York 19, Secretary.

AMERICAN COLLEGE OF CHEST PHYSICIANS, Atlantic City, N. J., June 2-5. Mr. Murray Kornfeld, 112 East Chesnut St., Chicago 11, Executive Director.

AMERICAN DIABETES ASSOCIATION, Chalfonte-Haddon Hall, Atlantic City N. J., June 4-5. Dr. John A. Reed, 1 East 45th St., New York 17, Secretary

AMERICAN ELECTROENCEPHALOGRAPHIC SOCIETY, Palmer House, Chicago, June 10-12. Dr. W. T. Liberson, EEG Research Laboratory, Veterans Administration Hospital, Northampton, Mass., Secretary.

AMERICAN FEDERATION FOR CLINICAL RESEARCH, Haddon Hall, Atlantic City, N. J., May 1. Dr. Lawrence E. Hinkle Jr., 525 East 68th St., New York 21, Secretary.

AMERICAN GASTROENTEROLOGICAL ASSOCIATION, Claridge Hotel, Atlantic City, N. J., June 3-4. Dr. H. Marvin Pollard, University Hospital, Ann Arbor, Mich., Secretary.

AMERICAN GASTROSCOPIC SOCIETY, West Room, Haddon Hall, Atlantic City, N. J., June 2. Dr. John Tilden Howard, 12 East Eager St., Baltimore 2, Secretary.

AMERICAN GYNECOLOGICAL SOCIETY, Chateau Frontenac, Quebec, Canada, May 23-25. Dr. John I. Brewer, 104 S. Michigan Blvd., Chicago 3, Secretary.

AMERICAN MEDICAL WOMEN'S ASSOCIATION, Hotel Dennis, Atlantic City, N. J., June 2-5. Miss L. T. Majally, 1790 Broadway, New York 19, Executive Secretary.

AMERICAN NEUROLOGICAL ASSOCIATION, Palmer House, Chicago, June 13-15. Dr. H. Houston Merritt, 710 West 168th St., New York 32, Secretary.

AMERICAN OPHTHALMOLOGICAL SOCIETY, Greenbrier Hotel, White Sulphur Springs, W. Va., June 2-4. Dr. Maynard C. Wheeler, 30 West 59th St., New York 19, Secretary.

AMERICAN ORTHOPEDIC ASSOCIATION, Greenbrier Hotel, White Sulphur Springs, W. Va., June 19-22. Dr. George O. Eaton, 4 East Madison St., Baltimore 2, Secretary.

AMERICAN PEDIATRIC SOCIETY, Chateau Fromenac, Quebec, Canada, June 13-17. Dr. Alms C. McGuinness, Medical Laboratories, University of Pennsylvania, Philadelphia 4, Secretary.

AMERICAN PROCTOLOGIC SOCIETY, Hotel Statler, New York, June 1-4. Dr. Karl Zimmerman, 3500 Fifth Ave., Pittsburgh 13, Secretary

AMERICAN PSYCHIATRIC ASSOCIATION, Traymore and Claridge Hotels, Atlantic City, N. J., May 9-13. Dr. William Malamud, 80 East Concord St., Boston 18, Secretary.

AMERICAN PSYCHOSOMATIC SOCIETY, Claridge Hotel, Atlantic City, N. J., May 4-5. Dr. Theodore Lidz, 333 Cedar St., New Haven 11, Conn., Secretary.

AMERICAN RHEUMATISM ASSOCIATION, Hotel Dennis, Atlantic City, N. J., June 3-4. Dr. William H. Kammerer, 33 East 61st St., New York 21, Secretary.

AMERICAN SOCIETY FOR ARTIFICIAL INTERNAL ORGANS, Hotel Chelsea, Atlantic City, N. J., June 4-5. Dr. Peter F. Salisbury, Institute for Medical Research, 4751 Fountain Ave., Los Angeles 29, Acting Secretary.

AMERICAN SOCIETY FOR CLINICAL INVESTIGATION, Haddon Hall, Atlantic City, N. J., May 2. Dr. J. D. Meyers, Duke University School of Medicine, Durham, N. C., Secretary.

AMERICAN SOCIETY OF MAXILLOFACIAL SURGEONS, Brown Hotel, Louisville, Ky., May 9-11. Dr. John A. Drummond, 1414 Drummond St., Montreal, Canada, Secretary

AMERICAN SOCIETY FOR THE STUDY OF STERILITY, Ritz-Carlton Hotel, Atlantic City, N. J., June 3-5. Dr. Herbert H. Thomas, 920 South 19th St., Birmingham, Ala., Secretary.

AMERICAN THERAPEUTIC SOCIETY, Shelburne Hotel, Atlantic City, N. J., June 2-5. Dr. Oscar B. Hunter Jr., 915 Nineteenth St. N.W., Washington 6, D. C., Secretary.

AMERICAN TRUDEAU SOCIETY, Schroeder Hotel, Milwaukee, May 23-27. Dr. W. G. Childress, 1790 Broadway, New York 19, Secretary.

AMERICAN UROLOGICAL ASSOCIATION, Hotel Biltmore, Los Angeles, May 16-19. Dr. Charles H. deT. Shivers, 121 South Illinois Ave., Atlantic City, N. J., Secretary.

ARIZONA MEDICAL ASSOCIATION, El Conquistador, Tucson, May 4-7. Dr. Dermont W. Melick, 401 Security Building, Phoenix, Secretary.

ARKANSAS MEDICAL SOCIETY, Arlington Hotel, Hot Springs, May 29-June 1. Dr. J. J. Monfort, 215 Kelley Bldg., Fort Smith, Secretary.

ASSOCIATION OF AMERICAN PHYSICIANS, Chalfonte-Haddon Hall, Atlantic City, N. J., May 3-4. Dr. W. Barry Wood Jr., 600 S. Kingshighway Blvd., St. Louis 10, Secretary.

ASSOCIATION FOR RESEARCH IN OPHTHALMOLOGY, Dennis Hotel, Atlantic City, N. J., June 7-9. Dr. Lorand V. Johnson, 10515 Carnegie Ave., Cleveland 6, Secretary.

CALIFORNIA MEDICAL ASSOCIATION, Palace Hotel, San Francisco, May 1-4. Mr. John Hunton, 450 Sutter St., San Francisco 8, Executive Secretary.

CATHOLIC HOSPITAL ASSOCIATION OF THE U. S. AND CANADA, Kiel Auditorium, St. Louis, May 16-19. Mr. M. R. Kneifl, 1438 South Grand Blvd., St. Louis 4, Executive Secretary.

GEORGIA, MEDICAL ASSOCIATION OF, Bon Air Hotel, Augusta, May 1-4. Mr. Milton D. Kreuger, 875 West Peachtree St., Atlanta, Executive Secretary.

HAWAII MEDICAL ASSOCIATION, Honolulu, May 5-8. Dr. Samuel L. Yee, 510 South Beretania St., Honolulu 13, Secretary.

IDAHO STATE MEDICAL ASSOCIATION, Sun Valley, June 19-22. Mr. Armand L. Bird, 364 Sonna Bldg., Boise, Executive Secretary.

ILLINOIS STATE MEDICAL SOCIETY, Hotel Sherman, Chicago, May 17-20. Dr. Harold M. Camp, 224 South Main St., Monmouth, Secretary.

KANSAS MEDICAL SOCIETY, Baker Hotel, Hutchinson, May 1-5. Dr. J. A. Butin, 315 West Fourth St., Topeka, Secretary.

LOUISIANA STATE MEDICAL SOCIETY, Roosevelt Hotel, New Orleans, May 2-4. Dr. C. Grenes Cole, 1430 Tulane Ave., New Orleans 12, Secretary.

MAINE MEDICAL ASSOCIATION, The Samoset, Rockland, June 19-21. Mrs. Esther M. Kennard, 142 High St., Portland 3, Secretary.

MASSACHUSETTS MEDICAL SOCIETY, Hotel Statler, Boston, May 17-19. Dr. Robert W. Buck, 22 Fenway, Boston 15, Secretary.

MEDICAL LIBRARY ASSOCIATION, Hotel Schroeder, Milwaukee, May 17-20. Miss Esther Judkins, Rockefeller Institute, 66th St. at York Ave., New York 21, Secretary.

MEDICAL SOCIETY EXECUTIVES CONFERENCE, Ritz-Carlton Hotel, Atlantic City, N. J., June 4. Mr. W. H. Bartleson, 3036 Gillham Road, Kansas City 8, Mo., Secretary.

MEDICAL SURGICAL CONFERENCE, Great Falls, Mont., June 20-21. Dr. Carl Nelson, 600 Central Ave., Great Falls, Mont., Secretary.

MINNESOTA STATE MEDICAL ASSOCIATION, Hotel Radisson, Minneapolis, May 23-25. Mr. R. R. Rosell, Lowry Medical Arts Bldg., St. Paul 2, Executive Secretary.

MISSISSIPPI STATE MEDICAL ASSOCIATION, Hotel Buena Vista, Biloxi, May 10-12. Mr. Rowland B. Kennedy, 860 Milner Bldg., Jackson, Executive Secretary.

NATIONAL TUBERCULOSIS ASSOCIATION, Hotel Schroeder, Milwaukee, May 23-27. Dr. James E. Perkins, 1790 Broadway, New York 19, Managing Director.

NEBRASKA STATE MEDICAL ASSOCIATION, Hotel Paxton, Omaha, May 16-19. Dr. R. B. Adams, 1315 Sharp Bldg., Lincoln, Secretary.

NEW MEXICO MEDICAL SOCIETY, Hilton Hotel, Albuquerque, May 4-6. Mr. Ralph R. Marshall, 223 First National Bank Bldg., Albuquerque, Executive Secretary.

NEW YORK, MEDICAL SOCIETY OF THE STATE OF, Hotel Statler, Buffalo, May 9-13. Dr. Walter P. Anderton, 386 Fourth Avenue, New York 16, Secretary.

NORTH AMERICAN CHAPTER, INTERNATIONAL SOCIETY OF ANGIOLOGY, Chalfonte-Haddon Hall, Atlantic City, N. J., June 4. Dr. Henry Haimovici, 105 East 90th St., New York 28, Secretary.

NORTH CAROLINA, MEDICAL SOCIETY OF THE STATE OF, Hotel Carolina, Pinehurst, May 2-4. Mr. James T. Barnes, 203 Capitol Club Building, Raleigh, Executive Secretary.

NORTH DAKOTA STATE MEDICAL ASSOCIATION, Hotel Prince, Bismarck, April 30-May 3. Dr. E. H. Boerth, Box 1198, Bismarck, Secretary.

OKLAHOMA STATE MEDICAL ASSOCIATION, Mayo Hotel, Tulsa, May 8-11. Mr. R. H. Graham, 1227 Classen Drive, Oklahoma City, Executive Secretary.

PACIFIC NORTHWEST SOCIETY OF PLASTIC AND RECONSTRUCTIVE SURGEONS, Spokane, Wash., May 21. Dr. E. E. Banfield, Medical Arts Bldg., Tacoma 2, Washington, Secretary.

RHODE ISLAND MEDICAL SOCIETY, Rhode Island Medical Society Library, Providence, May 4-5. Dr. Thomas Perry Jr., 106 Francis St., Providence 3, Secretary.

ROCKY MOUNTAIN MEDICAL CONFERENCE, Hilton Hotel, Albuquerque, N. Mex., May 4-6. Mr. Ralph R. Marshall, 223-224 First National Bank, Albuquerque, N. Mex., Secretary.

SOCIETY OF AMERICAN BACTERIOLOGISTS, Statler Hotel, New York, May 8-13. Dr. John Hays Bailey, Sterling Winthrop Research Institute, Rensselaer, N. Y., Secretary.

SOCIETY OF BIOLOGICAL PSYCHIATRY, Palmer House, Chicago, June 11-12. Dr. George N. Thompson, 2010 Wilshire Blvd., Los Angeles 5, Secretary.

SOCIETY FOR INVESTIGATIVE DERMATOLOGY, Ritz-Carlton Hotel, Atlantic City, N. J., June 4-5. Dr. Herman Beerman, 255 South 17th St., Philadelphia 3, Secretary.

SOCIETY FOR PEDIATRIC RESEARCH, Chateau Frontenac, Quebec, Canada, June 15-18. Dr. Sydney S. Gellis, 330 Brookline Ave., Boston 15, Secretary.

SOCIETY FOR VASCULAR SURGERY, Atlantic City, N. J., June 3. Dr. George D. Lilly, 333 Ingraham Bldg., Miami 32, Fla., Secretary.

SOUTH CAROLINA MEDICAL ASSOCIATION, Francis Marion Hotel, Charleston, May 10-12. Dr. Robert Wilson, 165 Rutledge Ave., Charleston, Secretary.

SOUTH DAKOTA STATE MEDICAL ASSOCIATION, Lawler Hotel, Mitchell, May 21-24. Dr. G. I. W. Cottam, 300 First National Bank Bldg., Sioux Falls, Secretary.

SOUTHERN BRANCH, AMERICAN PUBLIC HEALTH ASSOCIATION, New Orleans, May 11-13. Dr. Frank M. Hall, P. O. Box 491, Gainesville, Fla., Secretary.

STUDENT AMERICAN MEDICAL ASSOCIATION, Sherman Hotel, Chicago, May 6-8. Mr. Russell F. Staudacher, 510 N. Dearborn St., Chicago 10, Executive Secretary.

THE ENDOCRINE SOCIETY, Chalfonte-Haddon Hall, Atlantic City, N. J., June 2-4. Dr. Henry H. Turner, 1200 N. Walker St., Oklahoma City 3, Secretary.

UNITED STATES-MEXICO BORDER PUBLIC HEALTH ASSOCIATION, Hotel del Bosque, Mexico, D. F., May 6-9. Dr. Sidney B. Clark, 204 U. S. Court, El Paso, Texas, Secretary.

UPPER PENINSULA MEDICAL SOCIETY, Gateway Hotel, Land O'Lakes, Wis., June 17-18. Dr. William H. Wacek, Box 680, Ironwood, Mich., Secretary.

WESTERN INDUSTRIAL MEDICAL ASSOCIATION, Sir Francis Drake Hotel, San Francisco, April 30. Dr. Edward J. Zaik, 740 S. Olive St., Room 320, Los Angeles 14, Secretary.

WISCONSIN, STATE MEDICAL SOCIETY OF, Hotel Schroeder, Milwaukee, May 3-5. Mr. Charles H. Crownhart, 704 East Gorham St., Madison 3, Secretary.

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION, Haddon Hall, Atlantic City, N. J., June 6-10. Miss Margaret Wolfe, 535 N. Dearborn St., Chicago 10, Executive Secretary.

WYOMING STATE MEDICAL SOCIETY, Hotel Connor, Laramie, June 5-7. Mr. Arthur R. Abbey, Box 2036, Cheyenne, Executive Secretary.

FOREIGN AND INTERNATIONAL

AUSTRALASIAN MEDICAL CONGRESS, Sydney, N.S.W., Australia, Aug. 20-27. For information write: Federal Council of the B.M.A. in Australia, 135 Macquaire St., Syndey, N.S.W., Australia.

BRITISH MEDICAL ASSOCIATION, Representative Meeting, London, England, June 1-4. Dr. A. Macrae, B.M.A. House, Tavistock Square, London, W.C.1, England, Secretary.

CANADIAN AND BRITISH MEDICAL ASSOCIATIONS, Joint Meeting, Toronto, Canada, June 20-22. Dr. Arthur D. Kelly, 244 St. George St., Toronto, Canada, General Secretary.

COMMONWEALTH HEALTH AND TUBERCULOSIS CONFERENCE, Royal Festival Hall, London, England, June 21-25. Mr. J. H. Harley Williams, Tavistock House North, Tavistock Square, London, W.C.1, England, Secretary General.

CONGRESS OF INTERNATIONAL ASSOCIATION OF APPLIED PSYCHOLOGY, London, England, July 18-23. Dr. C. B. Frisby, National Institute of Industrial Psychology, 14 Welbeck St., London, W.1, England, President.

CONGRESS OF INTERNATIONAL ASSOCIATION OF PSYCHOTECHNOLOGY, London, England, July 18-23. For information write: Dr. C. B. Frisby, Director, National Institute of Industrial Psychology, 14 Welbeck St., London, W.1, England.

CONGRESS OF THE INTERNATIONAL ASSOCIATION FOR THE STUDY OF THE BRONCHI, Stockholm, Sweden, June 18-19. For information write: Dr. J. M. Lemoine, 187 boulevard St. Germain, Paris 7e, France.

CONGRESS OF INTERNATIONAL DIABETES FEDERATION, Cambridge, England, July 4-8. Mr. James G. L. Jackson, 152 Harley St., London, W.1, England, Executive Secretary General.

CONGRESS OF INTERNATIONAL SOCIETY OF SURGERY, Copenhagen, Denmark, July 23-29. Dr. L. Dejardin, 141 rue Belliard, Brussels, Belgium, General Secretary.

EUROPEAN CONGRESS ON RHEUMATISM, Scheveningen, The Hague, Netherlands, June 13-17. Dr. H. van Swaay, Pieter Bothstraat 12, The Hague, Netherlands, Secretary.

INTERNATIONAL ANATOMICAL CONGRESS, Paris, France, July 25-30. Prof. Gaston Cordier, 45, rue des Saints-Pères, Paris 6e, France, Secretary General.

INTERNATIONAL CONGRESS OF ACUPUNCTURE, Paris, France, May 14-17. Dr. J. Gillet, Avenue Franklin D. Roosevelt, 8/111, Paris 8e, France, Secretary.

INTERNATIONAL CONGRESS OF ALLERGOLOGY, Rio de Janeiro, Brazil, S. A., Nov. 6-13. Dr. Bernard N. Halpern, 197 boulevard St. Germain, Paris 7e, France, Secretary General.

INTERNATIONAL CONGRESS OF ANGIOLOGY AND HISTOPATHOLOGY, Fribourg, Switzerland, Sept. 2-5. For information write: Dr. Gerson, 4 rue Pasquier, Paris 8e, France.

INTERNATIONAL CONGRESS OF BIOCHEMISTRY, Brussels, Belgium, Aug. 1-6. Prof. C. Liebecq, 17 Place Delcour, Liège, Belgium, Secretary General.

INTERNATIONAL CONGRESS OF COMPARATIVE PATHOLOGY, Lausanne, Switzerland, May 26-31. Professor Hauduroy, 19 rue Cesar Roux, Lausanne, Switzerland, Secretary General.

INTERNATIONAL CONGRESS OF CRIMINOLOGY, London, England, Sept. 11-18. For information write: Dr. Carroll, 28 Weymouth St., London, W.1, England.

INTERNATIONAL CONGRESS OF EUROPEAN SOCIETY OF HAEMATOLOGY, Freiburg i.Br., Germany, Sept. 20-24. Prof. Dr. L. Heilmeyer, Hugstetter Strasse 55, Freiburg i.Br., Germany, Chairman.

INTERNATIONAL CONGRESS OF LIBRARIANSHIP AND DOCUMENTATION, Brussels, Belgium, Sept. 11-18. For information write: Dr. A. C. Breycha-Vauthier, Librarian, United Nations, Geneva, Switzerland.

INTERNATIONAL CONGRESS OF NEUROPATHOLOGY, London, England, Sept. 12-17. Dr. W. H. McMenemey, Maida Vale Hospital for Nervous Diseases, London, W.9, England, Secretary.

INTERNATIONAL CONGRESS OF PLASTIC SURGERY, Stockholm, Sweden, Aug. 1-4, and Uppsala, Sweden, Aug. 5. Dr. Tord Skoog, Uppsala, Sweden, General Secretary.

INTERNATIONAL CONGRESS ON URINARY LITHIASIS, Evian, France, Sept. 2-4. Mr. Rossollin-Grandville, Direction Cachet, Evian (Hte-Savoie), France, Secretary General.

INTERNATIONAL HOSPITAL CONGRESS, Lucerne, Switzerland, May 29-June 3. Capt. J. E. Stone, International Hospital Federation, 10 Old Jewry, London, E.C.2, England, Hon. Secretary.

INTERNATIONAL MEDICAL CONGRESS, Verona, Italy, Sept. 1-4. For information write: c/o Offices of the International Verona Fair, Piazza Bra., Verona, Italy.

INTERNATIONAL OFFICE OF DOCUMENTATION OF MILITARY MEDICINE, Istanbul, Turkey, Aug. 28-Sept. 1. Dr. J. Voncken, 79 rue Saint Laurent, Liege, Belgium, Secretary-General.

INTERNATIONAL SOCIETY FOR THE STUDY OF BIOLOGICAL RHYTHMS, Stockholm, Sweden, Sept. 15-17. For information write: Prof. Ture Petrén, Karplinska Institutet, Stockholm 60, Sweden.

INTERNATIONAL SURGICAL CONGRESS, Geneva, Switzerland, May 23-26. Dr. Max Thorek, 1516 Lake Shore Drive, Chicago, Illinois, U. S. A., Secretary General.

INTERNATIONAL SYNDICATE OF GYNECOLOGISTS AND OBSTETRICIANS, Meeting Hall of Medical Societies, Paris, France, June 27-28. Dr. Jacques Courtois, 1, rue Racine, Saint-Germain-en-Laye (S & O), France, Secretary General.

IRISH MEDICAL ASSOCIATION, Trinity College, Dublin, Ireland, July 4-8. Dr. P. J. Dolaney, 10 Fitzwilliam Place, Dublin, Ireland, Secretary.

IRISH OPHTHALMOLOGICAL SOCIETY, Dublin, Ireland, May 13-14.

NEURORADIOLOGIC SYMPOSIUM, London, England, Sept. 13-17. Dr. R. D. Hoare, National Hospital, Queen Square, London, W.C.1, England, Secretary.

PAN AMERICAN CONGRESS OF OPHTHALMOLOGY, Santiago, Chile, S. A., Jan. 9-14, 1956. Dr. Rene Contardo, Huerfanos 930, Of. 74, Santiago, Chile, Secretary General.

PAN AMERICAN CONGRESS ON RHEUMATIC DISEASES, Rio de Janeiro and Sao Paulo, Brazil, S. A., Aug. 14-20. For information write: Dr. Waldemar Bianchi, 126 Avenida Franklin D. Roosevelt, Rio de Janeiro, Brazil, S. A.

VENEZUELAN CONGRESS OF MEDICAL SCIENCES, Caracas, Venezuela, S. A., Nov. 18-26. Dr. A. L. Briceno Rossi, Apartado 4412, Ofic. del Este, Caracas, Venezuela, S. A., Secretary General.

WORLD CONGRESS OF ANESTHESIOLOGISTS, Scheveningen, Netherlands, Sept. 5-10. For information write: Mr. W. A. Fentener van Vlissingen, Noord-Houdringelaan, 24, Bilthoven, Netherlands.

WORLD FEDERATION FOR MENTAL HEALTH, Istanbul, Turkey, Aug. 21. For information write: Miss E. M. Thornton, 19 Manchester St., London, W.1, England.

WORLD MEDICAL ASSOCIATION, Vienna, Austria, Sept. 20-26. Dr. Louis H. Bauer, 345 East 46th St., New York 17, N. Y., U. S. A., Secretary General.

EXAMINATIONS AND LICENSURE

BOARDS OF MEDICAL EXAMINERS

ALABAMA: *Examination.* Montgomery, June 21-23. Sec., Dr. D. G. Gill, 537 Dexter Ave., Montgomery 4.

ARKANSAS:* *Examination.* Little Rock, June 9-10. Sec., Dr. Joe Verser, Harrisburg.

CALIFORNIA: *Written.* San Francisco, June 20-23; Los Angeles, Aug. 22-25; and Sacramento, Oct. 17-20. *Oral and Clinical Examinations for Foreign Medical School Graduates.* San Francisco, June 19; Los Angeles, Aug. 21; and San Francisco, Nov. 13. *Oral Examination for Reciprocity Applications.* San Francisco, June 18; Los Angeles, Aug. 20; and San Francisco, Nov. 12. Sec., Dr. Louis E. Jones, Room 536, 1020 N Street, Sacramento.

COLORADO:* *Examination.* Denver, June 14-15. Final date for filing applications is May 13. Exec. Sec., Miss Beulah H. Hudgens, 831 Republic Bldg., Denver 2.

DELAWARE: *Examination.* Dover, July 12-14. *Endorsement.* Dover, July 21. Final date for filing applications is June 15. Sec., Dr. Joseph S. McDaniel, Dover.

DISTRICT OF COLUMBIA:* *Examination.* Washington, May 9-10. Deputy Director, Mr. Paul Foley, 1740 Massachusetts Avenue, N.W., Washington.

FLORIDA:* *Examination.* Jacksonville, June 26-28. Sec., Dr. Homer L. Pearson, 901 N.W. 17th St., Miami.

GEORGIA: *Examination.* Atlanta and Augusta, June 7-8. *Reciprocity.* June 9. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta.

INDIANA: *Examination.* Indianapolis, June 21-23. Exec. Sec., Miss Ruth V. Kirk, 538 K. of P. Building, Indianapolis.

IOWA:* *Examination.* Iowa City, June 13-15. Exec. Sec., Mr. Ronald V. Saf, State Office Bldg., Des Moines.

KANSAS: *Examination and Endorsement.* Kansas City, June 8-9. Sec., Dr. O. M. Davidson, 872 New Brotherhood Bldg., Kansas City.

KENTUCKY: *Examination.* Louisville, June 6-8. Asst. Sec., Mr. Raymond P. Dixon, 620 S. 3rd St., Louisville.

LOUISIANA: *Regular. Examination and Reciprocity.* New Orleans, June 2-4. Sec., Dr. Edwin H. Lawson, 930 Hibernia Bank Bldg., New Orleans. *Homeopathic. Examination and Reciprocity.* Subject to Call. Sec., Dr. F. H. Hardenstein, 903 Pere Marquette Bldg., New Orleans 12.

MAINE: *Examination and Reciprocity.* Augusta, July 12-13. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

MARYLAND: *Regular Examination.* Baltimore, June 21-24. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 18. *Homeopathic Examination. Written.* Baltimore, June 20-22. Sec., Dr. Robert B. Reddick, Eastern Shore State Hospital, Cambridge.

MASSACHUSETTS: *Examination.* Boston, July 12-15. Sec., Dr. Robert C. Cochrane, Room 37, State House, Boston.

MICHIGAN:* *Examination.* Ann Arbor and Detroit, June 15-17 (tentative). Sec., Dr. J. Earl McIntyre, 118 Stevens T. Mason Bldg., Lansing 8.

MINNESOTA:* *Examination.* Minneapolis, June 14-16. Sec., Dr. F. H. Magney, 230 Lowry Medical Arts Bldg., St. Paul 2.

MISSISSIPPI: *Examination and Reciprocity.* Jackson, June 27-29. Asst. Sec., Dr. R. N. Whitfield, State Board of Health, Jackson.

MISSOURI: *Examination.* St. Louis, June 1-2. *Reciprocity.* St. Louis, June 3. Sec., Mr. John A. Halley, P. O. Box 4, Jefferson City.

NEBRASKA:* *Examination.* Omaha, June. Director, Bureau of Examining Boards, Mr. Husted K. Watson, State Capitol Bldg., Room 1035, Lincoln 9.

NORTH CAROLINA: *Examination.* Raleigh, June 20-23. *Reciprocity.* Pinehurst, May 2, Blowing Rock, July 29. Sec., Dr. Joseph J. Combs, 716 Professional Building, Raleigh.

NORTH DAKOTA: *Examination.* Grand Forks, July 6-8. *Reciprocity.* Grand Forks, July 9. Sec., Dr. C. J. Glaspel, Grafton.

OHIO: *Written.* Columbus, June 13-15. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus 15.

OKLAHOMA:* *Examination.* Oklahoma City, June 7-8. Sec., Dr. C. Gallagher, 813 Braniff Bldg., Oklahoma City.

PENNSYLVANIA: *Examination.* Philadelphia and Pittsburgh, June 27-29. Acting Sec., Mrs. Marguerite G. Steiner, Box 911, Harrisburg.

SOUTH CAROLINA: *Examination.* Columbia, June 27-29. *Reciprocity.* Charleston, May 10. Sec., Mr. N. B. Heyward, 1329 Blanding St., Columbia.

SOUTH DAKOTA:* *Examination and Reciprocity.* Rapid City, July 19-20. Exec. Sec., Mr. John C. Foster, 300 First National Bank Bldg., Sioux Falls.

TEXAS:* *Examination and Reciprocity.* Fort Worth, June 20-22. Sec., Dr. M. H. Crabb, 1714 Medical Arts Bldg., Fort Worth 2.

VIRGINIA: *Examination.* Richmond, June 16-18. *Reciprocity.* Richmond, June 15. Address: The Secretary, 631 First St., S.W., Roanoke.

WASHINGTON:* *Examination and Reciprocity.* Seattle, July 10-13. Sec., Mr. Edward C. Dohm, Capitol Bldg., Olympia.

WEST VIRGINIA: *Examination and Reciprocity.* Charleston, July 11-12. Sec., Dr. N. H. Dyer, State Office Bldg., No. 5, Charleston.

WYOMING: *Examination and Reciprocity.* Cheyenne, June 6. Sec., Dr. Franklin D. Yoder, State Office Bldg., Cheyenne.

ALASKA:* On application. Sec., Dr. W. M. Whitehead, 172 South Franklin St., Juneau.

GUAM: The Commission on Licensure will meet whenever a candidate appears or submits his credentials. Sec., Dr. John E. Kennedy, Agana.

HAWAII: *Examination.* Honolulu, July 11-14. Sec., Dr. I. L. Tilden, 1020 Kapiolani St., Honolulu.

VIRGIN ISLANDS: *Examination and Reciprocity.* St. Thomas, June 8-9. Sec., Dr. Earle M. Rice, St. Thomas.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARKANSAS: *Examination.* Little Rock, May 3-4. Sec., Mr. S. C. Dellinger, Zoology Dept., University of Arkansas, Fayetteville.

FLORIDA: *Examination.* Miami and Gainesville, May 14. Sec., Mr. M. W. Emmel, Box 340, University of Florida, Gainesville.

NEBRASKA: *Examination.* Omaha, May 3-4. Director, Mr. Husted K. Watson, 1009 State Capitol, Lincoln.

OREGON: *Examination.* Portland, June 4, Sept. 10, and Dec. 3. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

SOUTH DAKOTA: *Examination.* Vermillion, June 10-11. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

WASHINGTON: *Examination.* Seattle, July 6-7. Sec., Mr. Edward C. Dohm, Capitol Bldg., Olympia.

WISCONSIN: *Examination.* Milwaukee, May 14, Madison, Sept. 23. Sec., Mr. William H. Barger, 621 Ransom St., Ripon.

ALASKA: On application. Juneau or other towns in Territory as decided by Board. *Reciprocity.* On application. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

*Basic Science Certificate required.

MAGAZINE–TELEVISION REPORT

The following list of current medical articles appearing in mass-circulation magazines on medical subjects is published each week only for the information of readers of THE JOURNAL. *Unless specifically stated, the American Medical Association neither approves nor disapproves of the articles and programs herein reported.*

MAGAZINES

Life, April 18, 1955

"A Real-Life 'Medic'" (Picture Story)

In Atlanta, Ga., television station WSB-TV cooperated with local medical agencies in the presentation of an operation for lung cancer. The program originated live from the Baptist General Hospital.

Woman's Home Companion, May, 1955

"Reinsurance Has No Magic," by Hazel Holly

The magazine's Public Affairs Editor discusses the health reinsurance bill. She says: "It is quite possible that the reinsurance proposal is not only no cure-all, as Mrs. Hobby said, but a cure-little-or-nothing. If this is true, the new baby—already puny—may die in this Congress, just as a similar proposal did last year."

Cosmopolitan, May, 1955

"Polio—1955," by Donald Cooley

Written before the Salk vaccine announcement, Mr. Cooley's article seeks to answer many of the general questions about poliomyelitis and inoculations against it. He discusses natural immunity, live virus versus killed virus vaccines, and personal precautions that can be taken.

"Is Yours a 'Tired Family?'" by Robert Mines

"Dr. Dwight L. Wilbur, professor of medicine at Stanford University, recently reported that over half of all patients seen by American physicians complain of feeling tired." According to the author, the "tired feeling" runs in families. He quotes the views of numerous experts on the cause of such fatigue and what can be done to prevent it.

"A Retarded Child's Mother," by Flora Rheta Schreiber

The personal campaign of Mrs. Dorthea Forester, Knoxville, Tenn.—mother of a retarded child—to provide proper facilities for training of such youngsters.

Look, May 17, 1955

"Air Force Doctor," by Roland H. Berg

This six-page picture and text story follows Capt. Robert V. Dermott, M.D., Philadelphia, through internship at Walter Reed Medical Center to active duty with the 7373rd Air Force Hospital in Chateauroux, France.

Reader's Digest, May, 1955

"Facts About Mental Illness," by Lois Mattox Miller

The author says "public opinion has not caught up with the facts" of mental illness. She answers questions on the subject ranging from "What is mental illness?" to "How successful is modern therapy?" and "Can mental illness be prevented?"

"Pre-Menstrual Tension: the Needless Misery," by Dr. Robert B. Greenblatt with Richard L. Frey

Dr. Joseph H. Morton, New York Medical College, combined results of research into prevention of premenstrual tension into one formula. Volunteers at Westfield State Farm, a woman's reformatory near New York City, showed marked improvement during a three month study of the effects of this formula.

"She Was 'Dead' for 50 Minutes," by A. A. Hoehling

Published originally in February, 1955, in *McCall's*, the article tells how a medical team worked for 50 minutes to resuscitate a patient whose heart stopped during an operation.

Better Homes and Gardens, May, 1955

"Medicine's Newest Weapon," by Lawrence Galton

The author reports experimental use of a "combination of two natural substances" (vitamin C and bioflavonoids) with a capillary-strengthening ability for such things as poliomyelitis, rheumatic fever, prevention of miscarriage, diabetes, high blood pressure, respiratory infection, menstruation, and bruising. He says one version of the preparation (CVP) is being sold over the drug counter while the other (Hesper-C) is available only on prescription.

"Tonsils—Should They Come Out or Not?" by Mary Jean Tapscott

A discussion of tonsils and adenoids. Miss Tapscott explains why the trend is to leave them in unless there is a special reason for surgery.

Parents' Magazine, May, 1955

"Preparing a Child for the Hospital," by Jack Allan Weiss, M.D.

An associate professor at Chicago Medical College points out ways to make a trip to the hospital less fearsome for a youngster.

DEATHS

Abu-Khair, Dahir Elias, Brooklyn, N. Y.; Loyola University School of Medicine, Chicago, 1934; member of the Medical Society of the State of New York; died March 25, aged 62, of coronary thrombosis.

Aldrich, Fred Noble ● Macon, Ga.; University of Vermont College of Medicine, Burlington, 1908; past president of the Eye, Ear, Nose and Throat Society of Georgia; served during World War I; died Feb. 25, aged 69, of acute myocardial infarction.

Almquist, Reuben Emanuel ● Gary, Ind.; Rush Medical College, Chicago, 1928; served during World War II and was awarded the Legion of Merit; died March 10, aged 54.

Batson, Theodore Thomas, New Orleans; Tulane University of Louisiana School of Medicine, New Orleans, 1915; on the staffs of the Charity Hospital of Louisiana and the Hotel Dieu, Sisters' Hospital, where he died March 13, aged 65, of bronchogenic carcinoma of the right lung with metastasis to the brain.

Bell, Samuel Hayward, Monterey Park, Calif.; Denver College of Medicine, 1896; died in Bellflower March 12, aged 81, of congestive heart failure and diabetes mellitus.

Blair, Thomas Harmon ● Adrian, Mich.; University of Michigan Medical School, Ann Arbor, 1931; served during World War II; on the staff of the Emma L. Bixby Hospital, where he died Feb. 21, aged 51, of acute myocardial infarction.

Brandon, Ben Bernard ● Edgewood, Texas; Baylor University College of Medicine, Dallas, 1910; died Feb. 6, aged 76, of heart disease.

Carle, Horace Woodward ● St. Joseph, Mo.; University of Louisville (Ky.) School of Medicine, 1940; served during World War II; past president of the Missouri Heart Association; on the staffs of Missouri Methodist and St. Joseph's hospitals; died Feb. 24, aged 39, of coronary disease.

Conway, Marines Willett, Laguna Beach, Calif.; University of Cincinnati College of Medicine, 1910; specialist certified by the American Board of Psychiatry and Neurology; while practicing in Cheney, Wash., was on the school board; served as superintendent of the Eastern State Hospital at Medical Lake, Wash., and the Arizona State Hospital in Phoenix; died Feb. 25, aged 66, of leukemia.

de Saussure, Henry William ● Charleston, S. C.; Medical College of the State of South Carolina, Charleston, 1897; formerly on the faculty of his alma mater; at one time associated with the U. S. Public Health Service; member of the South Atlantic Association of Obstetricians and Gynecologists; died in the Roper Hospital March 13, aged 79, of myocardial infarction.

Dobbins, Royal Bolton ● Warren, Ohio; University of Pennsylvania School of Medicine, Philadelphia, 1913; member of the founders group of the American Board of Surgery; fellow of the American College of Surgeons; on the staff of the Warren City Hospital; died in Los Angeles Feb. 12, aged 63, of malignant melanoma with metastases and thrombosis of the left femoral artery.

Engle, Henry Rolfe ● Redding, Calif.; Cornell University Medical College, New York City, 1943; certified by the National Board of Medical Examiners; specialist certified by the American Board of Internal Medicine; served during World War II; died March 5, aged 36, of injuries received in an automobile accident.

Evans, Robert Morris ● Russiaville, Ind.; Washington University School of Medicine, St. Louis, 1926; president of the Howard County Medical Society; on the staff of St. Joseph Hospital in Kokomo; died Feb. 21, aged 58, of coronary thrombosis.

● Indicates Member of the American Medical Association.

Franklin, Horace Greeley, Thorsby, Ala.; University of Louisville (Ky.) School of Medicine, 1930; died Dec. 22, 1954, aged 48.

Gallego, Louis Nathaniel, Asheville, N. C.; Long Island College Hospital, Brooklyn, N. Y., 1912; died in the Memorial Mission Hospital Jan. 29, aged 67, of uremia.

Goodman, Robert S., Charlottesville, Va.; Medical College of Virginia, Richmond, 1899; died in the Western State Hospital, Staunton, Jan. 27, aged 81, of carcinoma of the lung.

Harrell, Roy W. ● St. Louis; Loyola University School of Medicine, Chicago, 1917; member of the Illinois State Medical Society; formerly on the staffs of the Veterans Administration hospitals in Marion, Ill., and in Poplar Bluff, Mo.; on the staffs of Barnes and Washington University hospitals; died Feb. 24, aged 63, of carcinomatosis.

Jones, Bernard Walter, Houghton, Mich.; Rush Medical College, Chicago, 1881; served as health officer of Norway township; died in St. Joseph's Hospital in Hancock March 12, aged 98, of cardiac failure.

Kerr, John French ● Connellsville, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1899; affiliated with Connellsville Hospital, where he died March 5, aged 84, of a cerebral accident.

Leary, William Joseph, Seattle; John A. Creighton Medical College, Omaha, 1905; served during World War I; for many years physician and surgeon for the U. S. Coast and Geodetic Survey, U. S. Department of Commerce; died in the U. S. Public Health Service Hospital Feb. 25, aged 74, of a heart attack.

Meisenheimer, Harold Orris ● Arlington Heights, Ill.; University of Illinois College of Medicine, Chicago, 1935; served as a member of the local health board; on the staffs of St. Joseph and Sherman hospitals in Elgin; died in a plane crash near Oconomowoc, Wis., March 6, aged 45.

Mignin, Charles Frederic, Castile, N. Y.; Michigan College of Medicine and Surgery, Detroit, 1895; died in Lamont Feb. 17, aged 86, of cerebral thrombosis, arteriosclerosis, and carcinoma of the prostate.

Nowlin, J. Burton, Charlotte, N. C.; College of Physicians and Surgeons, Baltimore, 1896; died Jan. 4, aged 81, of bronchopneumonia.

O'Brien, Tracy Marvin, Plainfield, Ind.; University of Louisville (Ky.) School of Medicine, 1922; died Jan. 26, aged 59.

Procopio, Joseph ● Verona, Pa.; University of Pittsburgh School of Medicine, 1929; interned at the Elizabeth Steel Magee Hospital in Pittsburgh; served during World War II; instructor in medicine at his alma mater; associated with the Pittsburgh Hospital; died Dec. 3, 1954, aged 54, of coronary infarction.

Reis, Louis Norman ● Middleton, Wis.; Creighton University School of Medicine, Omaha, 1950; served overseas during World War II; on the staffs of the St. Mary's and Methodist hospitals in Madison; died Feb. 5, aged 47.

Schmid, Charles Frank ● Hermosa Beach, Calif.; Chicago College of Medicine and Surgery, 1913; district school physician; an associate member of the American Medical Association; died Feb. 19, aged 68.

Thompson, Frank P. ● Chicago; Jenner Medical College, Chicago, 1901; died in the Michael Reese Hospital March 26, aged 83, of coronary sclerosis.

Wadsworth, William Scott, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1897; for many years coroner's physician; author of "Post Mortem Examinations"; died March 20, aged 87, of cancer of the pancreas.

Wallace, Jesse Emmons ● Tulsa, Okla.; University of Tennessee Medical Department, Nashville, 1906; veteran of the Spanish-American War; died March 19, aged 75.

FOREIGN LETTERS

DENMARK

Treatment of Lumbago and Sciatica.—In the *Ugeskrift for læger* for Jan. 20, Jensen and Lund reported a series of 235 consecutive cases of lumbago and sciatica treated between 1948 and 1951 in the Odense County and City Hospital; 210 were the subject of a follow-up examination in the Fall of 1953 after an observation period of two to five years. Operative treatment had been undertaken in 66 patients, and the others received only conservative treatment. Most of the patients operated on had first been given conservative treatment for 6 to 12 weeks, without any appreciable effect. Conservative treatment had consisted of absolute rest in bed, short wave diathermy, and/or massage. The operations for herniated nucleus pulposa were disappointing, as about half of them were followed by relapse. With the patients operated on being, on the whole, only slightly better off than those who received conservative treatment only, the authors recommended more careful selection of patients for operation.

In the same issue Bang and Sury reported a series of 100 patients with lesions of the nucleus pulposa treated by traction. They used a modification of the apparatus devised at St. Thomas Hospital, London, England. Traction increasing from 25 to 75 kilos is maintained for about half an hour. About 10 treatments are given on alternate days. This treatment was found to be especially useful in patients with recent herniation. Cheap, safe, and capable of ambulant application, it may in some patients obviate prolonged rest in bed and operative treatment. Definite improvement in a few weeks was observed in about half the patients in this series. Most of them had previously been treated in other ways without any benefit.

Bronchogenic Carcinoma.—At surgical departments D and R of the Rigshospital in Copenhagen encouraging progress has been made in the operative treatment of bronchogenic carcinoma. F. Therkelsen and H. R. Sörensen have reported in *Nordisk medicin* for Jan. 20, a study of 555 such cases representing either the comparatively benign plate-epithelium-cell carcinoma (planocellular carcinoma) or the more malignant adenocarcinoma or the still more malignant undifferentiated carcinomas. The operative mortality was 29.8% in the period 1942 to 1948, but was only 11.3% for the year 1953. Parallel with the falling mortality in the period under review, there was a rising operability reflecting the growing experience in this field. The five year survival rate among the patients undergoing lung resection was 40%—an improvement on the reported achievements of other surgeons possibly due to the comparatively larger proportion of planocellular carcinomas in the present series. For patients under the age of 60 who suffered from planocellular carcinoma without gland metastases and without involvement of the pericardium, pleura, or other structures, the five year survival rate was 70%. Follow-up examinations showed that many patients had been able to resume heavy work.

Obese Children.—*Danish Science Press* has published a study by Dr. Flemming Quaade entitled "Obese Children: Anthropology and Environment" based on a series of 188 obese and 998 normal children aged 6 to 16 years. These children were from four municipal schools in Copenhagen in which there were 3,771 children aged 6 to 16 years. An intensive study of environmental factors was undertaken with 36 obese children and their families. The author concluded that obesity in childhood does not depend on any endocrine disturbance but rather on the conditions under which the children are fed. Hence he recommends health education regarding feeding habits. Many of his conclusions run contrary to the teachings of Bruch who believes that obesity in childhood is often the outcome of a psychopathological reaction of the child to his environment.

The items in these letters are contributed by regular correspondents in the various foreign countries.

ENGLAND

Sir Alexander Fleming.—The sudden death on March 11 of Sir Alexander Fleming came just over two months after he retired from the principalship of the Wright-Fleming Institute of Microbiology at St. Mary's Hospital. Official retirement, however, did not mean his retirement from research, and he had been working in the room reserved for him in the institute on the day before his death. It is an interesting coincidence that the first and last papers that he published under his own name were published in *The Practitioner*. In 1908, the year in which he graduated from the University of London, there appeared in the May issue his first solo article: "Some Observations on the Opsonin Index with Special Reference to the Accuracy of the Method and to Some Likely Sources of Error." His last article appeared as the foreword to a symposium on penicillin published in the January, 1955, issue to commemorate the 25th anniversary of the publication of his first report on his discovery of penicillin. In that foreword he said of penicillin that it "is still the least toxic and, within its range, the most effective" of antibiotics; that "there is not going to be a general development of resistant organisms which would render penicillin useless"; and its unique feature of having no basic patents and its cheapness, the price being "so low that the manufacturer gets less for the penicillin that the cost of the package in which it is marketed."

Fleming was a farmer's son, born in Ayrshire, in the southern uplands of Scotland, on Aug. 6, 1881. He was educated as he once said, "in a wee school out in the country away beyond Darvel. But that wee school up on the hill, that's where they really taught you something." His father died when young Alexander was only 8. In 1895, at the age of 14, he joined his older brothers in London, and continued his education there, entering a shipping office in 1897. Four years later he received a small legacy and his brother, Thomas, who was a physician, persuaded him to study medicine. He once said, "There are twelve medical schools in London. I did not know any of them, but I had played water-polo against St. Mary's, so to St. Mary's I went." He had a brilliant undergraduate career and graduated with honors and a gold medal. His interests were widespread. In his early days he was a competent and enthusiastic shot. As an amateur painter he made many friends in the world of art. Motoring and gardening were among his other interests. This soft-voiced son of Scotland was entirely unspoiled by the honors that fell to him in his later years. There was no false modesty about him—in his quiet undemonstrative way he appreciated the recognition he received for his great discovery, but he always gave credit to others for what they had done to put penicillin on the therapeutic map. His epitaph might well be taken from a speech he made in 1946: "It is the glory of a good bit of work that it opens the way for better things and thus rapidly leads to its own eclipse. The object of research is the advancement not of the investigator, but of the knowledge."

Carcinoma of the Lung.—According to Sir Clement Price Thomas there is evidence that both cigarette smoking and atmospheric pollution are causative factors in the production of cancer of the lung. It is possible that neither will prove to be the initiating cause but they are possibly the factors that determine the site in which the cancer arises in a given patient (*Practitioner* 174:298, 1955). An analysis of the 416 patients on whom the author has operated during the period 1935 to 1953 shows that resections were performed in 272 and thoracotomy in 144. Of those who had resections, about two-thirds (187) were considered to be operable, and one-third merely resectable (those patients in whom portions of the diaphragm, pericardium, auricular wall, superior vena cava, esophageal wall, or chest wall had to be resected or in whom there were large masses of obviously involved glands). Owing to the uniformly bad results,

the practice of excision of the last group, that with large masses of secondarily involved glands, has been abandoned. There were enlarged glands in practically all patients in the operable group, and in a large proportion of these, microscopic evidence of metastasis was present. Enlargement of the lymph nodes does not necessarily indicate metastasis, though gross microscopic metastases, when present, cannot be mistaken. An analysis of the 133 patients operated on before November, 1948, reveals a five year survival rate of 25.5%. Among the 97 operable cases in this group, the five year survival rate was 32.9%, and 40.2% died within a year of operation. Of the 36 resectable cases, 5.5% survived more than five years, and 55.5% died within the first year. The analysis also revealed a change in the ratio between operable and resectable cases in favor of the latter, with a lowering in the general mortality. In the same period there was also an increase in the number of cases subjected to resection from 60 to just over 75%, i. e., fewer cases are now being subjected to thoracotomy alone.

Radiotherapy is of great value as a palliative procedure. It has little effect on pleural effusion, but in at least 50% of the patients thus responds to the introduction of radioactive gold into the pleura. In certain patients the tumor can be made to disappear with adequate x-ray therapy. He has records of four cases in which this was confirmed at necropsy and of another confirmed by postoperative removal. The survival rates for radiotherapy are: 15% survive more than two years, 6.4% more than three years, and 5.9% more than five years. The author quotes a case record in justification of his statement that the patient is able to control the disease when it is apparently firmly established, for some years at least. The patient was a woman physician in whom at operation secondary deposits from a carcinoma of the lower lobe were found to cover the visceral and parietal pleura in such a way that a finger could not be placed on the pleura without touching a deposit. A lobectomy was performed for psychological reasons, so that the patient, although she knew she had a tumor, could be told it had been removed. The postoperative convalescence was uneventful. The patient lived for five and one-half years, during five of which she did not miss one day's work and remained in excellent health. She died with a malignant pleural effusion in the right contralateral pleura, and secondary deposits in the contralateral lung, the originally affected side remaining normal.

Future of Neurology.—Because he is concerned for the future of neurology and has grave doubt as to whether we are giving sufficient thought to the problems that surround it if it is to remain an active, advancing, and fruitful branch of medicine, Sir Francis Walsh, one of the few clinicians to have been made a Fellow of the Royal Society of Medicine, recently discussed this matter before the section of neurology of the society (*Proc. Roy. Soc. Med.* 48:120, 1955). A century of nosography and morbid anatomy has left us with many crucial problems of etiology and treatment. Neither the neuroanatomists nor the neurophysiologists have contributed much to the elucidation of these problems. The root of the trouble is the persisting assumption among neurologists that research in anatomy and physiology is all that matters. Although the study of the structure and the function of the nervous system must always be an important element in the formation of the neurologist's mind, they can no longer continue to be the principal field of his research, or his chief tools in the approach to the problems of the disease; partly because they are largely irrelevant to his primary responsibilities, and even more because we now have other disciplines that offer hopeful prospects for research of a kind from which patients may derive greater advantage. The speaker advocated a coordinated survey to determine what the neurologist's research responsibilities are. All major contributions to curative treatment (apart from those we owe to the neurosurgeon) have come, not from the neurophysiological laboratory or from the clinical neurologist, but from workers and laboratories not primarily concerned with diseases of the nervous system. The speaker said that if a young physician who has had a residency in clinical neurology, spent two or three years studying some aspect of biochemistry so that he might be better equipped to do clinical work he would probably find the narrow gate of neurological opportunity closed to him, while some more worldly-wise young man had slipped through it along the well-worn track of electrophysiology. No one disputes that morbid anatomy and histology have made a fundamental contribution to neurology but to continue to regard neuropathy as concerned solely or even mainly with what can be seen in a microscope or a postmortem room is now an obsolete view. The crux of the matter is that the young man who today aspires to become a neurologist is aiming higher than the state or the neurology committee, who plan as though all that neurological medicine needs to survive is a supply of men able to meet the day-to-day needs of a state hospital and to provide consultant services.

No Confidence in the Minister of Health.—Last year a storm of protest was aroused by the action of the Minister of Health in closing down the only maternity hospital available to general practitioners in Blackburn, Lancashire. The matter has again been brought to the fore by a letter signed by 46 physicians (Supplement to the issue of the *British Medical Journal* for March 5, 1955) which reads:

"We, the general practitioners of Blackburn, wish to bring to the notice of the profession the following facts. On January 8, 1954, Springfield Maternity Home, Blackburn, was closed by the Blackburn and District Hospital Management Committee. This decision was made by the hospital management committee without consultation with the executive council and the local medical committee. . . . The secretary of the hospital management committee visited the wards of the home at 8 p. m. on January 7 and announced, to the great surprise of the patients, that they had the option of being transferred the following morning to a maternity home seven miles away or of being returned to their own homes. Some of the medical advisers of these patients were informed by the same person at 9 a. m. the following morning by telephone that their patients were in the process of transfer. One doctor, whose patient had been delivered a few hours previously, on hearing a rumour that Springfield was closing, telephoned the home at 10 a. m. for information. He was informed by the secretary that the transfer of patients was already in progress. His energetic protest that his patient was not fit to be moved was brushed aside, with the observation that his views were irrelevant. In spite of deputations to the Ministry and the Minister himself from local B. M. A. representatives and the General Medical Services Committee of the B. M. A., and strong protests from the floor of the House of Commons, this flagrant overriding of the doctor's clinical responsibility for his patient by a lay official has been consistently condoned by the Minister of Health. . . . We therefore feel it our duty to state that we have no confidence whatsoever in the present Minister of Health, and wish to alert the profession to this new tendency to subordinate the doctor's clinical judgment to the irresponsible dictates of the lay administrator."

Music in Medicine.—The role of music as a therapeutic measure was reviewed recently by Mr. Frank Howes, the music critic of *The Times*, in an address before the Royal Society of Arts on Feb. 21. Galen played music to cure snake bite, and Pythagoras recommended music for the relief of depression. Howes said that in one mental hospital soothing music was played to disturbed patients at bedtime, but the only result was a fight. On another occasion the playing of the last two movements of Williams' F minor symphony to a group of neurotic patients brought into the open their hostility to psychiatrists in no uncertain terms. In another mental hospital music was played to patients and they were then asked to paint their response. Their pictures showed either depression (after Mahler's "Adagietto") or elation (after Britten's "Variations on a Theme of Purcell"). The result of Mendelssohn's "Overture to a Midsummer Night's Dream" was that 13 of 17 pictures were of violence: robbery, war, murder, and suicide. This inconstancy of the effects of music was very marked. Thus, with some, music provoked an emotional explosion and release that was beneficial, in a few it provoked epileptic seizures, and others were unaffected. On the other hand, it is possible to classify listeners as: Cecilians, who are susceptible to pure sound; Dionysiacs, in whom the response is emotional; and Oppolonians, the "purely musical." In other words, the response to music is a sensuous, emotional, or intellectual experience. Only those in the second group are likely to be therapeutically benefited. Howes did not accept Dr. Licht's thesis, in

"Music in Medicine," that the music played should be bad music—an endless succession of oldtime favorites. Rather, he believed that patients are a cross section of the public, with the same musical tastes and that they need something not too long or complicated, but not too well known either. His own summing up of the value of music in the hospital was that it might awaken a new and lasting interest. Above all it was a communal activity and brought the solitary into contact with their fellows.

Leprosy Control.—The modern treatment of leprosy based on the sulfone group of drugs is unsatisfactory, according to Dr. J. R. Innes, director of the East African Research Center, in a lecture to the Edinburgh branch of the Royal Society of Tropical Medicine on March 2. Leprologists should express their dissatisfaction as a preparation for further advance. On the asset side were the facts that (1) sulfones result in clinical arrest and bacterial negativity in 70 to 80% of active cases, (2) the relapse rate is low, (3) relapses are easily reversed, (4) drug reactions are infrequent, (5) the annual cost of treatment is low, (6) useful adjuvants such as thiacetazone, isoniazid, corticotropin, cortisone, streptomycin, chlorpromazine [10-(γ-dimethylaminopropyl)-2-chlorophenothiazine hydrochloride] and cyanocobalamin are also available, and (7) drug resistance to the sulfones is practically unknown. On the debit side was the fact that it takes too long to achieve bacterial cure in nodular cases. A failure rate of 20 to 25% indicates their inadequacy. Instead of achieving bacterial negativity in 6 to 12 months, which would be a useful period in controlling the spread of the disease, they take three years or more. Patients with leprosy soon learn that the drug has power and wait as patiently as they can for the final happy result, but few escape periods of doubt and despair as month succeeds month. In some of them hope dies, and this reacts unfavorably on their prospect of ultimate cure. Another weakness in the present attack on leprosy is the fact that criteria of cure are vague. Furthermore there is no way of modifying the resistance of the patient with leprosy. The lepromin test does not stimulate direct resistance but merely indicates the degree of resistance already present. Although it has been suggested that BCG vaccine might be a valuable prophylactic there is no evidence that this is so. Innes criticized the over-neglect of hydnocarpus oil. Local intradermal injections are useful in resistant tuberculoid and indeterminate lesions. There should be greater cooperation between tuberculosis and leprosy workers in countries where both diseases exist. In the treatment of leprosy the only sound policy at present is to investigate drugs that act against human tuberculosis.

Arsenic Content of Food.—The Food Standards Committee of the Ministry of Food has recommended the introduction of limits of arsenic in food. Water and milk should not normally contain arsenic, but in any case should not contain more than 0.1 ppm. For other beverages ready to drink they recommend the same limit, and for other foods 1 ppm. There are certain foods, mainly concentrated foods and food adjuncts, to which general limits cannot be applied, and for these the following limits in parts per million are recommended: cider 0.2; black beer, concentrates used in the manufacture of soft drinks and undiluted fruit juices, and ice cream 0.5; liquid pectin, chemicals (other than chalk) used as ingredients or in the preparation of processing of foods 2.0; chalk and chicory (dried or roasted) 4.0; and solid pectin, spices, and food colorings other than synthetic colorings 5.0. The committee believes that the limits proposed are enforceable, and that, under conditions of good commercial practice, there should be no difficulty in conforming to them. They therefore recommend that statutory effect be given to these limits.

Anthrax.—In 1953, Davies and Harvey (*Lancet* **2**:880, 1953) said that in Wales most cases of anthrax in man could be traced to contact with sun-dried bones imported from the Far East. Jamieson and Green of Scotland (*Lancet* **1**:560, 1954) have now reported six patients with anthrax, in all of whom there was a history of contact with bone-meal from the Far East. Three were agricultural workers, one was a dock laborer who had been unloading crude bone-meal, one was a nurseryman, and the sixth was an amateur gardener who had handled bone-meal fertilizer in his garden. Bacillus anthracis was isolated from three of the five samples of bone-meal available for bacteriological examination. The authors believe that bone-meal fertilizer was the cause in all six patients and conclude: "Bone-meal appears to be used extensively as a fertilizer not only by the agricultural community but also by a wide section of town-dwellers in their gardens. It is obviously desirable to ensure that bone-meal used in this country should be rendered safe from the hazards of anthrax."

Hospital Costs in Scotland.—In the year ended March 31, 1954, the average cost of maintaining a patient in a hospital in Scotland, excluding specialists' salaries and overhead charges for empty beds, was $23 a week, an increase of 3.5% over 1953. More than half of this sum went for staff salaries, food, laundry, etc., and $1.48 for drugs, dressings, and surgical appliances. There was a marked difference between types of hospital. Thus, in maternity hospitals the weekly cost per patient was $43.25, compared with $12.32 in institutions for mentally deficient patients. These differences are largely due to differences in staffing. Maternity hospitals, for example, have on the average 4.4 physicians and 90.4 nurses per 100 patients, compared with 0.3 physician and 19.2 nurses in mental institutions. A feature to which official attention is drawn is the marked variation between the charges in hospitals of the same type. For example, in one maternity hospital the weekly cost per patient was $30 and in another it was $50.83. Similarly, the cost in one general hospital was $23 and in another of the same size it was $38.92.

Mass Radiography in Liverpool.—The annual report of the Liverpool Regional Hospital Board for the year ended March 31, 1954, shows that of 50,882 patients who had roentgenograms by the mass radiography unit, 25,723 were referred by general practitioners. The remainder were made up as follows: 12,649 National Service recruits and 12,510 routine cases. The number of persons recalled for a full-size film on account of some suspected abnormality was 6,163 (11.2%). The number of patients in whom active tuberculosis was discovered was 517, of whom 461, or 17.9 per thousand, were referred by general practitioners. There were also 82 patients with neoplasm, 79 of whom were under the care of general practitioners. During the year the board was called on to take roentgenograms of the crew of the liner Gothic in which the Queen and the Duke of Edinburgh made their world tour. One man with active tuberculosis was discovered among the deck hands.

Diphtheria Prophylaxis.—A new low record for diphtheria is shown by the official figures for 1954 (182 cases, with nine deaths). The comparable figures for 1945 were 18,596 cases, with 722 deaths. During the first half of 1954, 305,552 children were immunized, of whom 118,693 were under one year of age. The aim of the authorities is to secure immunization of not less than 75% of babies before their first birthday. Immunization of the children reaching the age of one year increased from 28% in 1951 to 35.8% for the first half of 1954.

A New Journal.—A new quarterly journal, the *British Journal of Haematology*, made its appearance in January. Until now there has been no British journal devoted exclusively to hematology, with the result that papers on this subject by British authors have been scattered not only among a variety of British journals but also quite frequently among American or continental journals. Contributions to the new journal will be welcomed both from home and overseas.

Dr. Schweitzer Honored.—The Queen has appointed Dr. Albert Schweitzer, the French philosopher, musician, and medical missionary, an honorary member of the Order of Merit. The only other living person with honorary membership of the order is President Eisenhower, who, in 1945, became the first American to receive the distinction. In 1947 it was conferred on another American, Mr. John G. Winant, who was American ambassador to Britain from 1941 to 1946.

ITALY

Psychosomatics in Psychiatry.—On the 79th anniversary of the Medical Academy of Rome, Prof. Mario Gozzano said that one group of scientists believe a psychological factor to be the only cause of mental disease, while the other asserts that mental diseases are somatic diseases, and that psychological symptoms are the expression of cerebral impairment. He stated that the extremes of Wartenberg must be avoided. Wartenberg believed that mental diseases do not exist but that we must admit that the somatic problem exists as the organic basis of mental diseases and presents itself under three aspects—histopathological, biochemical, and neurobiological. Each one of these aspects has had its moment of triumph. The histopathological aspect, characterized by the discovery of the bases of progressive paralysis, was weakened when it became certain that pathology did not supply information about the genesis and the significance of the psychological symptoms. The biological aspect seemed more appealing because alterations of the metabolism and the hormonal balance as well as intoxications are often found in psychological diseases. Although a constant relation between a certain disease and a certain chemical substance has not yet been shown experimentally, substances have been found outside the organism that cause disturbances nearly identical to those caused by various mental diseases. Thus bulbocapnine causes loss of the motor initiative and the passivity of catatonia. Mescaline acts on the psychological components of the human organism and has a marked disturbing action, because it causes sensory illusions and delirium, at the same time leaving a total lucidity of consciousness as in schizophrenia.

The neurophysiological aspect includes the psychological symptoms caused by cerebral lesions. A good example is the demolition of the frontal lobes, or lobotomy, which causes an interruption of the correlations and integrations between thought and sentiment. The same holds true for the stimulation of the hypothalamus, which produces manic excitement, anger, or sleep, according to which of its areas is stimulated, and for the phenomena of depersonalization and of body-image agnosia due to lesions of the parietal lobe. The question arises as to what importance psychogenic factors can have in view of the fact that anything may occur without their intervention. The psychological cause does not explain the onset of the psychiatric disease in which there is a pathogenetic factor, which in turn causes states of anxiety and psychological phenomena, thus establishing a vicious circle.

Trauma of the Brain.—At the National Convention of the Society of Surgery held in Rome, October, 1954, Professor Fasiani of the University of Milan and his co-workers reported that understanding of the movements of acceleration and deceleration of the brain inside the cranium has made it possible to localize lesions with greater precision. The large lacerative and contusive foci of the brain become the site of processes that lead to the formation of space-occupying masses that can cause progressive compressions within the cranium. The identification of cones of pressure or internal hernias as the expression of the displacement of part of the brain by hypertensive processes or by pathological space-occupying masses has become important. Temporal involvement frequently occurs in the evolution of an intracranial hematoma.

In the acute phase of a traumatic cerebral disease, the alterations of the blood circulation, the vegetative and metabolic disorders, and the choroidomeningeal reactions determine the diverse and changing course of the disease. As a consequence of this new way of looking at the traumatic diseases of the brain, the classical clinical syndromes of concussion, contusion, and compression were given up and other classifications were introduced, which, although still indefinite and unorganized, better meet the necessities of diagnosis and therapy. Of late years pneumoencephalography, cerebral angiography, and electroencephalography have been used to diagnose cerebral trauma. These methods have made it possible to decrease the number of wrong diagnoses and to establish with greater certainty the surgical indications. Carotid angiography is the simplest and most suitable of the modern diagnostic tools, because it can reveal the existence and location of space-occupying masses that displace other parts, differentiating them from the other lesions. Although the evaluation of the electroencephalographic findings is difficult, electroencephalography is harmless and should be used more extensively.

Rheumatic Fever.—At the sixth convention of physicians from the Sannio area in Benevento, October, 1954, Prof. Guido Bossa of the University of Naples stated that rheumatic fever is not increasing and in some countries appears to be decreasing. In the school population the incidence of acute rheumatic fever is about 1%. Although some have believed the disease to be due solely to streptococci, it is now generally believed that these organisms are only one factor in the pathogenesis and that an unidentified virus may play a role. What is known is that this disease is characterized by an abnormal reactivity of the connective tissues. It is also known that anti-infectious therapy alone does not cure the disease. If treatment is instituted before the disease becomes manifest, it can be prevented. Relapses can also be prevented. It is thus possible to prevent the acute attacks by the prophylactic administration of chemotherapeutic agents. Hormonal therapy has proved more useful against the abnormal reactivity of the connective tissues than the salicylates. The spread of the disease to the heart and other organs is related to the abnormal reactivity of the connective tissues. In the earliest stages there are alterations in the oropharynx, tonsils, and the upper respiratory pathways with a complex of general phenomena. Later alterations in the heart and the joints appear. These are mainly characterized by the varied and simultaneous involvement of several joints, a predilection for the large joints, the frequency of the relapses, and recovery without sequelae. Such other forms as nervous, serositic, and pulmonary may arise from the various localizations of the disease. Although the average life expectancy of persons with acute rheumatic fever in whom there are marked residual heart lesions is 20 to 30 years from the onset, more than 30% of such patients die within the first five years.

Sodium salicylate is still the drug of choice in the treatment of this disease. It must be administered in doses large enough to give blood levels of at least 30 mg. per 100 cc. and should be combined with sodium bicarbonate to prevent gastrointestinal disturbances. Brilliant results have been obtained with phenylbutazone and hormones. As regards tonsillectomy, the latest studies indicate that tonsils that are definitely and chronically diseased should be removed, but never during the period of active rheumatic infection. The operation must be preceded and followed by intense antibiotic therapy.

Cells' Thirst.—Professor Holter of the Copenhagen Carlsberg Laboratory reported at the Institute of Health in Rome on the results of his cytochemical studies on the drinking property of the cell in amebas. During drinking channels are formed in the cytoplasm. These channels run from the periphery to the inside, and through them the fluids of the environment are actively sucked by a mechanism (pinocytosis) that differs greatly from that of osmosis. Pinocytosis is induced only by some substances, especially proteins. During this process, large quantities of fluid are ingested. It was assumed that the substances that are found dissolved in the absorbed water during pinocytosis must play an important part in the cellular metabolism when they can be absorbed and used. This assumption was confirmed by studies on the absorption and metabolism of glucose. It was found, however, that glucose in solution induces the phenomenon of pinocytosis only in the presence of proteins. These proteins enter the cytoplasm, although the mechanism of their passage through the vacuolar membrane is unknown.

SPAIN

International Union Against Tuberculosis.—The 13th Conference of the International Union Against Tuberculosis was held in Madrid, October, 1954. Dr. Georges Canetti, of the Pasteur Institute of Paris, France, reported that the results of the treatment of acute miliary tuberculosis with streptomycin and isoniazid were spectacular. Resorption of the perifocal inflammation, total disappearance of the miliary tubercles, and fibrous or fibrohyaline transformation of the tubercles that do not disappear were observed. Fibrous transformation may occur after

a few weeks. One of the ways in which chemotherapy acts is apparently to prevent the caseation of a large number of the miliary foci. The larger pulmonary, lymph node, and extrapulmonary caseous foci that usually coexist with the miliary dissemination and that are its starting point appear to be less clearly influenced by chemotherapy. In any case, anatomic and bacteriological changes probably also occur in these foci, as shown by the rarity of miliary dissemination, but the chemotherapy is not necessarily its direct cause.

The author studied five kinds of lesions in patients with chronic pulmonary tuberculosis: exudative alveolitis, perifocal inflammation, specific cellular metaplasia, caseation, and cavities. Exudative alveolitis, the first stage of the tuberculous lesion in patients who have not been treated, is almost always absent from lungs removed after chemotherapeutic treatment. Chemotherapy exerts both a curative and a preventive action on this lesion, which is essentially caused by the multiplication of the bacilli. Perifocal inflammation, a lesion accompanying exudative foci, is likewise suppressed by chemical treatment. The specific cellular metaplasias (epithelioid and giant cells) frequently increase under chemotherapy. They occupy more extensive areas, their structure is more varied, they are grouped in more diverse ways, and their involutive aspects are found with greater frequency. Although these formations may become caseous or even liquefy, they usually become sclerosed. Caseous lesions are apt to be refractory to chemotherapy, but the difficulties of evaluation are great. Chemotherapy probably succeeds in transforming a certain number of small, recent, caseous foci completely into collagen. With large old foci, it almost always fails. Probably it often prevents liquefaction of the caseous lesion. Cavities are highly accessible to chemotherapy. The anatomic aspects of cavitary residue after chemotherapy may be divided into three categories. The first is that of failures: cavities not altered by the treatment. Even in these favorable histobacteriological modifications are often seen in the cavity wall. The second category is that of favorable results: fibrocaseous cavitary scars or pure sclerosis. The third category is that of the intermediate states: some cavities closed and some cleansed and sclerosed, with bullous cavities as a subvariant. The closed cavity and the cleansed cavity exemplify the two opposite processes that may operate in the cure of cavities: the first, while permitting the caseous material in the cavity to remain, devitalizes and organizes it; the second eliminates the caseous material and leads to tissue repair.

The study of the bacteriological changes produced by chemotherapy embraces two problems: the sterilization of the lesions and the changes in the sensitivity of the bacilli to the chemical agents. The sterilization of the lesions occurs differently according to whether open cavities or closed caseous lesions are involved. The literature as a whole shows that about 75% of the cavities left open by chemotherapy and not completely cleansed contain viable bacilli. On the other hand, most of the lesions that appear after chemotherapy as closed caseous lesions (which they were before treatment) do not contain viable bacilli; the rates of positivity range from 6 to 36%. In cases of positivity, as shown by culture or guinea pig inoculation, the bacilli contained in such lesions are much fewer than those in the open cavities. The effect of chemotherapy on the rate of negativity of the closed caseous lesions is very slight, if it exists at all. In any case, this result requires correct interpretation; it implies that chemotherapy has no bacteriological effect on the lesion considered to be in the closed caseous state; it does not imply that chemotherapy cannot transform a different initial lesion (cavity) into this state, or that it cannot draw a lesion out of this state, by favoring, for instance, its complete transformation into collagen. About 70% of the closed caseous lesions contain bacilli that are visible but not viable. This poses the problem of determining whether these bacilli are alive or dead. If they are alive, is it possible to restore to them their capacity for reproduction? When such bacilli are found after chemotherapy, can we be sure that the chemotherapy has put them into this indefinite state? The solution to these difficult problems has not yet been found. The sensitivity to the chemical agents of the bacilli isolated from unsterilized tuberculous lesions after chemotherapy appears differently according to whether the agents have been administered alone or in combination. When streptomycin and isoniazid are administered alone, resistant bacilli are found in many of the lesions treated for more than two months. The frequency of the resistance is the greater the richer the lesion is in bacilli, and it is greater for cavities than for nodules. In many cases, lesions containing strains of bacilli of varying sensitivity are found in a single patient.

After the administration of streptomycin with *p*-aminosalicylic acid for three to six months, the frequency of streptomycin resistance is not high. On the other hand, after giving isoniazid with *p*-aminosalicylic acid for three to six months, the frequency of isoniazid resistance is much higher, but when isoniazid is given with *p*-aminosalicylic acid the intensity of the isoniazid resistance is less than when it is given alone. When streptomycin or isoniazid are given with *p*-aminosalicylic acid, lesions containing bacillary strains of differing sensitivity are rarely found in the same patient. The reasons for the lesser effectiveness of combined treatments in preventing isoniazid resistance are not known.

Numerous works have shown that the virulence of the resistant bacilli is greatly diminished. The degree of stability of this attenuation in virulence, and its effect on the subsequent development of tuberculosis are not known. The mechanisms set in operation in the anatomic and bacteriological changes resulting from chemotherapy cannot be understood unless one first knows: (1) the extent of the diffusion of the chemical agents in the tuberculous lesions, (2) the extent of the penetration or nonpenetration of the chemical agents into the cells, (3) the extent of the activity of the chemical agents according to the physiological state of the bacilli, (4) the nature of the action of the chemical agents on the bacilli, and (5) the extent of the development of the bacilli in the interior of the lesions in the absence of chemotherapy. Professors Clarence Craaford, Stockholm, and Kjeld Toerning, Copenhagen, stated that the dietetic-hygienic treatment continues to be the basis of therapy in pulmonary tuberculosis. Surgical treatment has as its principal object the removal of cavities and necrotic lesions. Surgical interventions should be postponed whenever possible until the symptoms depending on acute inflammation have been relieved by absolute rest and chemotherapy. For the patients in whom tubercle bacilli are not demonstrable, surgical treatment is rarely indicated. In most patients in whom the characteristics and the extent of the lesions require permanent collapse, preference should be given to thoracoplasty. Extrapleural or extraperiosteal plombage should be used only exceptionally. Intrapleural or extrapleural pneumothorax is indicated in recent lesions of moderate extent, when it is believed that a temporary collapse will suffice. Empyema is rarely seen since the advent of chemotherapy. Pneumoperitoneum and phrenemphraxis have been almost entirely supplanted by chemotherapy. Lobectomy and pneumonectomy are indicated when there is extensive destruction of a lobe of a lung. Segmental resection, wedge-shaped resection, or simple excision is often preferred when there are important isolated necrotic foci. For minimal lesions of recent origin, exeresis does not give any better results than those obtained by temporary collapse. The drainage of cavities may be of value in some patients. The results of the study of cardiorespiratory function may in some patients contraindicate any surgical intervention. In others, they may influence the choice of the operation.

Dr. Julio Blanco of Madrid made an inquiry among the countries that belong to the International Union to determine whether recent therapeutic advances have had any effect on the programs of the fight against tuberculosis. The number of new cases being reported is declining, in those countries in which morbidity statistics are available, more slowly than the death rate for tuberculosis. The tuberculous section of the population in many countries is still large. Notwithstanding the short time that has elapsed since the new methods of treatment have been used, phthisiologists are aware of the need for changing the antituberculous programs to adapt them to the new state of affairs, but the changes affect only a small part of the total program. The classic preventive structure may receive support from the new prophylactic methods, still not well developed, which make use of isoniazid to prevent the infection of persons exposed to bacillary contamination or to prevent the development of the disease in persons whose tuberculin reaction has just become positive. The indiscriminate use of the new drugs must be controlled.

CORRESPONDENCE

FRACTURE OF HIPS OF ELDERLY PATIENTS

To the Editor:—Since I never heard of anyone successfully operating on a 103-year-old patient who has suffered a fracture of the femur, this is to report on the treatment of hip fractures in one such patient and two others who were over 90. All were treated in a small hospital in a rural community without the help of specialists. Spinal anesthesia was used in each case because it provides better relaxation, thus facilitating quicker reduction of the fracture. The patient is given 8 mg. of morphine and 0.2 mg. of scopolamine subcutaneously about an hour before operation. For the spinal anesthesia I use 150 mg. of procaine and 23 mg. of ephedrine in 2 cc. of spinal fluid; 23 mg. of ephedrine is also given intramuscularly. As soon as the patient is anesthetized he is placed on the affected side for about six minutes, and then he is placed on his back, with his body level and his head slightly elevated. The fracture is quickly reduced by placing one arm under the knee and the hand of the opposite side on the crest of the patient's ilium and abducting the thigh. A lateral roentgenogram of the hip is taken with the thigh flexed at right angles to the long axis of the body. The femur is then brought to the level of the body, with the knee flexed and the foot hanging down at the side of the x-ray table. An anteroposterior roentgenogram is then taken. In that manner the lateral and anteroposterior exposures may be taken without changing the position of the x-ray tube. If the position of the fragments is satisfactory, one assistant sits on a chair and rests the patient's foot on his knee to keep the femur in a constant position of slight internal rotation during the operation. When the plate or nail is driven half way to its final position another anteroposterior and another lateral roentgenogram are taken. If these show the position of the fragments to be satisfactory, operation is completed. Usually whole blood or 5% dextrose is given intravenously at the start of operation.

A 103-year-old man fell on Sept. 22, 1954. Roentgenograms showed an incomplete fracture of the neck of the left femur but no displacement. Weight bearing was prohibited, but the patient was allowed to be up in a chair. On Dec. 19, following another fall, a roentgenogram showed marked deformity at site of the old fracture of the neck of the left femur. There was shortening of the leg with external rotation. The patient had severe pain and swelling of left foot and ankle at this time. On the morning of Dec. 29 the fracture was reduced with the patient under spinal anesthesia and a Smith-Peterson nail (Engle-May type) was inserted. The time required for the operation was 20 minutes. A whole blood transfusion was started when the patient went into the operating room, and oxygen inhalation was given for three hours after the operation. The patient showed no signs of shock at any time, voided normally in the afternoon, and never had enough pain to require opiates, but 400,000 units of crystalline procaine penicillin G was given daily for seven days, although the patient's temperature was never above normal after the first postoperative day. An ounce of port wine was given before meals, and the patient was allowed to smoke his pipe or cigarettes as desired. On Jan. 8, 1955, the stitches were removed and the patient could move his hip freely in bed and had no pain whatsoever. He returned to his home on Jan. 15. Roentgenograms were taken about every two weeks, the last being taken on March 17. All showed the fracture being held in perfect position. The patient is up in a chair most of the day, but no weight bearing will be permitted until about six months after the operation. Because the patient is rather unsteady on his feet, I am afraid to let him use crutches.

A 92-year-old woman fell on Oct. 28, 1951. Roentgenograms revealed an intertrochanteric fracture of her left femur. Spinal anesthesia was given, and the patient went into shock immediately but recovered shortly after being given a subcutaneous injection of epinephrine and artificial respiration with the bag respirator. Then I reduced the fracture and inserted a Moore-Blount blade plate, using a 3 in. blade and a 5 in. plate. The patient was conscious and conversing at the completion of the operation. She was given 500 cc. of whole blood and 1,000 cc. of 5% dextrose intravenously. The wound healed perfectly, and there was no pain when she left the hospital on Nov. 17. Roentgenograms taken on May 5, 1952, showed perfect position of the fragments, and the patient started weight bearing. More than three years have passed since the operation, and the patient will soon be 96 years old. She has completely recovered from the fracture.

A 92-year-old man, who at the age of 89 years had had a strangulated inguinal hernia repaired and had made an uneventful recovery, fell on Dec. 16, 1950. Roentgenograms revealed a fracture of the neck of his right femur, but, because he had a cold, operation was delayed. On Dec. 19 the fracture was reduced with the patient under spinal anesthesia and a Smith-Peterson nail (Engle-May type) was inserted. The patient made an uneventful recovery from the operation and, on Dec. 28, was discharged from the hospital. For the next two and a half months he was comfortable, but, on March 3, 1951, he had an attack of bronchopneumonia and died shortly thereafter.

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DRUG ADDICTION

To the Editor:—In THE JOURNAL, March 12, 1955, page 948, there appeared a letter from John Y. Dent, editor of the *British Journal of Addiction*. Evidently he is not convinced that the British and United States laws for handling drug addicts do not differ. To end this confusion, which still exists in the minds of many members of the medical profession on this point, I suggest that you kindly publish the following excerpt from a Statement on the Narcotic Drug Traffic by the Hon. Paul Martin, Minister of National Health and Welfare, before the Special Senate Committee on Traffic in Narcotic Drugs in Canada, Room 262, the Senate, 10:30 a. m., Tuesday, March 15, 1955.

H. J. ANSLINGER
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Treasury Department
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Washington 25, D. C.

Legal Distribution to Registered Addicts

The third proposal made in the Vancouver brief is perhaps the most controversial proposal that has been made in connection with a treatment program. I do not propose to go into the implications of this in detail because I see that Dr. Stevenson, to whom I have already referred, has published in the January issue of The Bulletin an article entitled "Arguments for and against the Legal Sale of Narcotics." In this article, Dr. Stevenson deals adequately and exhaustively with this proposal and I would only add to what he convincingly sets forth that enforcement authorities in Canada and the United States are unanimously opposed to any plan involving free drugs to registered addicts for self-administration.

Perhaps Dr. Stevenson, if he appears before this committee, will wish to explain a further proposal which I understand he has made involving the withdrawal of addicts in general hospitals followed by a specialized rehabilitation program. A proposal for the treatment of addicts under an approved plan, which as part of it would require the administration of narcotic drugs under medical supervision, would not involve any change in the existing law. The provision, however, of drugs to compete with the illicit traffic is not, in my view, proper treatment and is not a matter that I could ever support. Apart from these reasons, there is the additional question of our international commitments by which we have agreed to limit narcotic drugs to medical and scientific use. It is highly doubtful if the provision of drugs to addicts could be said to come within such use.

There is a further suggestion which has been advanced but is not one made in the report which I have referred to. It is, however, one that has been put forth by many experienced enforcement authorities as offering the most practicable and realistic approach to the solution of the drug addict. This involves the establishment of treatment institutions with legal authority for the committal and detention of addicts for such period as is necessary for their treatment and rehabilitation. It would require the legal right to return to such institution an addict who had been released on discharge which, in turn, recognizes that a certain number of addicted persons might be more or less permanent inmates in that little hope could be held out for their successful treatment.

A close study of the operation of the treatment centre at Lexington, Kentucky, which I have already commented upon, is strongly recommended in connection with any such plan. Incidentally, I should point out that the Lexington institution would appear to be a very costly operation because of its size and the very elaborate facilities as well as the staff which is required. There is also a treatment centre for juvenile addicts being operated by the City of New York at Brothers Island in that city. Here again, the cost of the operation on a per patient basis is very high.

The question may arise as to whether, if this is a proposal which has been recommended by enforcement authorities, the Federal Government should not undertake it. I would point out, however, that there would be no legal authority for the Federal Government to enact the kind of legislation requiring the compulsory committal and detention of drug addicts while undergoing treatment. This is a matter with which only the provinces could deal for the reasons which I have previously referred to in discussing the jurisdictional aspects of the problem.

It is pointed out by the authorities that the compulsory committal of drug addicts either upon their own application or upon the application of interested friends or relatives would effectually remove them from access to the illicit market and would thus bring about a reduction and eventual elimination of the traffic. Perhaps others who will appear before the Committee will wish to say something with respect to the operation of such a plan. I merely wished to include it with my other comments so as to give to this Committee the benefit of a brief review of various proposals which have from time to time been urged by persons who are interested in Canada's drug problem.

United Kingdom

Undoubtedly there will be made during the course of this Committee's investigation some reference to the British Treatment plan as constituting something that Canada should adopt.

In this connection, I would refer the Honourable Senators to the article by Dr. G. H. Stevenson in the January issue of The Bulletin to which I have already referred. Mr. Hossick is, I understand, arranging for copies of this article to be made available to the members of the committee, together with other literature which he is assembling. In that article, Dr. Stevenson discusses informatively this so-called British Treatment System and I would recommend a perusal of this to the members of the committee.

I should like to add something to what Dr. Stevenson has said. We have unsuccessfully endeavoured to ascertain through the R. C. M. Police liaison in the United Kingdom, as well as by direct discussion with the United Kingdom authorities, wherein their system of narcotic control differs from ours to an extent that would constitute anything that could properly be called the British Treatment Plan. According to . . . the United Kingdom authorities, they maintain as strict a control over the supply and distribution of narcotic drugs as we do.

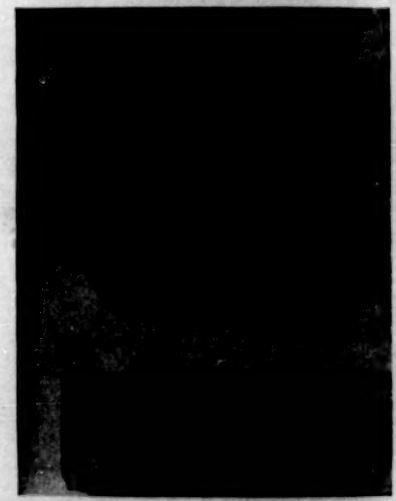
I understand, however, that they do not have the same requirements in that country respecting reports to be made by wholesalers and druggists as we do in Canada. The furnishing of narcotic medication to addicts solely to support addiction is regarded as improper in the United Kingdom. Ambulatory treatment is frowned upon and the authorities advise that they are quick to take appropriate action whenever a case comes to their attention that a doctor is supplying drugs to an addict. Insofar as the criminal addict population is concerned, the authorities report this to consist of a very few persons and nothing like the number that we admit to in Canada.

I am informed that the legal consumption of drugs in Canada on a per capita basis is, if anything, less than it is in the United Kingdom. I do not suggest that there is any significant deduction to be made from this but it is a fact to be taken into account in trying to make a comparison between the two countries.

I thought it appropriate to say something along these lines because so much has been said about the merits of the British System as compared with the system employed in this country as to cast some discredit upon our methods of dealing with our drug problem. If anyone is able to explain wherein there is a difference between the British and Canadian systems, I should be very glad to be informed. If anyone can explain to me why there should be virtually no criminal addict population in the United Kingdom in comparison with the admitted criminal addict population in Canada, I should be very glad to have their explanation. We have not been able to find out any logical reasons for the differences that are reported.

CATFISH BONE IN TRACHEA

To the Editor:—About eight years ago a woman fried and ate some catfish. While eating one of the fish she choked and had a severe paroxysm of coughing. She coughed almost incessantly that night. Following this she was at times reasonably free of cough for a few days, but often the paroxysms would recur, and sometimes she coughed up blood. Pneumonia was diagnosed several times, and once she was sent to a tuberculosis sanatorium for several months of observation. Several times the diagnosis of asthma was made, but the usual measures for the treatment of asthma were ineffective. Eight years after the onset of her cough she sought relief at the Ponce de Leon Infirmary. The first x-ray studies showed swelling in the soft parts posterior to the cricoid and upper trachea and some calcification that was considered to be in the cartilaginous structures. The lungs were clear. It seemed to us that the diagnosis in this case must be a nonradiopaque foreign body. Accordingly, a bronchoscopy was done, and the larynx and the main bronchi appeared normal except for the presence of a large amount of secretion. The patient's cough was aggravated in spite of the liberal use of antibiotics. Though our first endeavor to locate the offending object



Part of an upper catfish vertebra that had remained eight years in the tracheobronchial tree of a woman.

was unsuccessful, we still believed a foreign body was present. We therefore kept the patient in the infirmary for daily mirror laryngoscopy. On the sixth day this examination revealed a rather gray disk, partially concealed by mucus, just below the vocal cords. The patient was promptly anesthetized and the disk was withdrawn. It was a thin, irregularly shaped piece of bone measuring 16 mm. in its greatest diameter. It was identified as part of one of the upper vertebrae of the common channel cat. The patient remained in the hospital two days longer, greatly relieved. A roentgenogram following the second bronchoscopic examination showed that the calcification just below the larynx was gone and the swelling of the soft parts had also disappeared.

This case illustrates Jackson's aphorism, "All is not asthma that wheezes." Though the experience of our group in retrieving foreign bodies in the tracheobronchial tree extends back for 25 years and embraces more than 1,000 cases, we are still astounded at the variety of foreign bodies that can be aspirated or swallowed and what can happen to them afterwards. There seems to be no doubt that this piece of bone had been in the patient's tracheobronchial tree for eight years, and, although it caused her much inconvenience, it did no lasting harm. The vocal cords are exquisitely sensitive. One of their functions is to keep fluids and foreign bodies out of the trachea. In like manner, however, they can serve to obstruct the passage of foreign bodies up from the trachea. We believe this bone during the eight years in the trachea and major bronchi—being 16 mm. in diameter it could not have gotten into any of the smaller bronchi—was constantly changing its position and that this patient's severe paroxysms of coughing resulted from the fish-bone battering against the vocal cords from beneath. We are not sure why the bone, slightly smaller than a dime, was missed on the first bronchoscopic examination. Probably, thick, gray mucus held this bony disk against the wall of the trachea, which was about the same color, and so concealed it. This case proves again the advantage of persistence.

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MAIMONIDES—PHYSICIAN, ASTRONOMER, PHILOSOPHER, TALMUDIST

To the Editor:—On page 1158 of The Journal of March 26, 1955, "The Oath and Prayer of Maimonides" was reprinted with the notice: Maimonides—Islamic Philosopher and Sage of Cordova. Although Maimonides' works were published in Arabic language (he wrote Arabic in Hebrew characters), he was neither an Arab nor an Islamic philosopher. Moses Ben Maimon (RaMBaM; usually called Maimonides) was a talmudist (rabbinical teacher), philosopher, astronomer, and one of the most famous physicians of his time. He was born at Cordova, March 30, 1135, and died at Cairo, Dec. 13, 1204; he is known in Arabic literature as Abu "Imran Musa ben Maimun ibn" Abd Allah. The history of the "second Moses," as Maimonides came to be called by his co-religionists, is overlaid with fable. He received his rabbinical instruction at the hands of his father, Maimon, himself a scholar of high merit, and was placed at an early age under the guidance of the most distinguished Arabic masters, who initiated him in all the branches of the learning of that time. Moses was only 13 years old when Cordova fell into the hands of the fanatic Almohades, and Maimon and all his co-religionists there were compelled to choose between Islam and exile. Maimon and his family chose the latter course, and for 12 years led a nomadic life, wandering hither and thither in Spain. In 1160 they settled at Fez, where, unknown to the authorities, they hoped to pass as Moslems. When this dual life became dangerous, last but not least because of the growing reputation of Maimonides as philosopher and poet, in 1165 the family embarked to Jerusalem and then to Cairo, where they settled. There he adopted the medical profession. After several years of practice Maimonides' authority in medical matters was firmly established and he was appointed private physician to the royal family. He published many scientific works in astronomy and medicine and religious philosophical books. His works were translated from Arabic into Hebrew, Latin, French, German, and many other languages and are of great interest and value. An Arabic contemporary sang his greatness as a physician in ecstatic verse. Translated to English it reads as follows:

> Galen's art heals only the body
> But Abu Imram's [Maimonides] the body *and* the soul
> With his wisdom he could heal the sickness of ignorance. . . .

Unfortunately so little is known among physicians about this great physician and philosopher whose influence on medicine in his time was not less than that of Hippocrates and Galen in their era.

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To the Editor:—I enjoyed reading Miscellany in the March 26, 1955, issue of The Journal, page 1158. However, I wish to bring to your attention that Maimonides was a great Jewish philosopher and not an Islamic philosopher. He was persecuted by Islam until he became the friend and physician to the Sultan. Maimonides compiled the laws of the Bible that are still used today. In his great work "The Guide for the Perplexed," he inveighed against incantations, amulets, and magical arts for treatment of illness and insisted upon natural methods. I wish to thank you again for the collection of art and prayers and for the tribute to the physician in Miscellany.

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WARNINGS AGAINST POISONING

To the Editor:—I should like to bring to the notice of the readers of The Journal a new approach to the problem of preventing aspirin poisoning that has recently been undertaken by this department. The Pharmaceutical Council of Greater New York has kindly consented to print and distribute cards to all pharmacists in the City of New York at the request of the Health Department. The card containing information on aspirin poisoning prevention, which is reproduced herewith, is the first in a series of similar informational cards that will be prepared by the New York City Health Department and printed and distributed by the Pharmaceutical Council.

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Commissioner of Health
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125 Worth St.
New York 13.

NEW YORK CITY HEALTH DEPARTMENT **NO. 1**

ASPIRIN, Accidental Poisoning

Facts: Aspirin and salicylates were the cause of 185 accidental deaths in the United States in children under 5, from 1949-1953. In New York City, since January 1954, 39 children were hospitalized or given emergency treatment for aspirin poisoning. Two deaths resulted from an overdose given by parents.

Prevention: Warn Your Customers That:

- Medicaments that are pleasantly flavored, attractively colored, sugar or chocolate coated, are especially appealing to children and have caused many accidental deaths and cases of illness.
- Aspirin and other potent drugs should be kept out of reach of children at all times.
- Medicine chests may not be safe enough. They should be locked or placed high above the child's reach.

LEONA BAUMGARTNER, M.D.
Commissioner of Health

October, 1954

PHARMACEUTICAL COUNCIL OF GREATER NEW YORK

MEDICINE AND THE LAW

MEDICOLEGAL ASPECTS OF ARTIFICIAL INSEMINATION: A CURRENT APPRAISAL

On Jan. 18, 1955, a decree of divorce was granted in the Superior Court of Cook County, Illinois, in the case of Doornbos vs. Doornbos. It was during the pendency of this action that Mary Doornbos, the plaintiff, through her attorney, petitioned the court for a declaratory judgment as to whether artificial insemination constitutes adultery, whether it is contrary to public policy, and whether a child of artificial insemination is legitimate and the child of the mother only. On Dec. 13, 1954, the trial judge made the following ruling:

"(1) Heterologous artificial insemination (when the donor is a third party) with or without the consent of the husband, is contrary to public policy and good morals, and constitutes adultery on the part of the mother. A child so conceived is not a child born in wedlock and therefore illegitimate. As such it is the child of the mother and the father has no right or interest in said child.

"(2) Homologous artificial insemination (when the donor is the husband of the woman) is not contrary to public policy and good morals and does not present any difficulty from the legal point of view."

This view represents the first decision of any court of record in the United States squarely on the issue: is artificial insemination adultery and contrary to public policy; and is a child so conceived legitimate? It represents further the first case in which testimony was adduced during a hearing that (1) medical tests had been made to determine the sterility of the husband, (2) the artificial insemination procedure was performed by a doctor of medicine, and (3) there was consent to the procedure by the mother and her husband. The decision of the court in this case attracted widespread publicity in the lay press and has been the subject of attention in at least two medical journals.[1]

At the request of the trial judge, the office of the state's attorney has filed a request for permission to intervene and appeal the portion of the decision declaring the child illegitimate. Until this case is finally decided, and then only in the state of Illinois, the legal unknowns incident to the procedure, when the donor is other than the husband of the mother, are still unresolved, by a court of last resort.

LEGAL UNKNOWNS

Since 1939, at least,[2] attention has been directed by the medical profession to the many legal uncertainties that attach to or arise from the performance of this procedure when the donor is other than the husband of the woman inseminated. Even earlier, THE JOURNAL published an article on the medicolegal aspects of this operation.[3] Basically, the question was and still is: Is the procedure lawful? Secondly, and of at least equal importance: Is the child so conceived legitimate? There is no authoritative answer to these questions. As long as they remain subject to debate, speculation, and surmise, an almost limitless number of strictly legal questions concerning the procedure may be asked. The limit to such questions depends only on the imagination, knowledge, and intellectual curiosity of the inquirer. Among other legal questions asked are the following: Can the doctor, the donor, or the husband, in addition to the wife, be found guilty of adultery? Is fraud perpetrated or an illegal act committed by executing a birth certificate without divulging that the mother's husband is not the natural father of the child? Does the donor have any obligation to the child if one results? Does the donor, under any circumstance, have rights of inheritance from the child? Is the child of heterologous artificial insemination an heir of his mother's husband's ancestors? Does the procedure contravene "spurious heir" statutes that have been enacted in some of the states? What is the relation, at law, between a child of heterologous artificial insemination and a naturally conceived child of the same mother and her husband? What are their respective rights? Does the procedure defeat carefully drawn adoption statutes—which have been so sedulously sought after? Might a couple, having been denied the privilege of adopting a child pursuant to adoption statutes, circumvent the statute by resorting to the procedure of heterologous artificial insemination? Might a husband and wife resort to the procedure, even in the absence of sterility of the husband, because of strictly eugenic reason? Must the procedure be limited to married women? If a woman is inseminated without her consent is the physician, the husband, or others guilty of rape?

LEGAL UNKNOWNS AND THE MEDICAL PROFESSION

Presently, the physician who is requested to or does perform heterologous artificial insemination might ask if the procedure is the practice of medicine in the accepted sense of the word. He will undoubtedly ask if it is a lawful procedure.[4] The physician may find reassurance that the performance of the procedure is not a violation of a criminal code or statute. He is not assured that the procedure is not contrary to public policy. If it is contrary to public policy he may rightfully question the validity of the consent executed by the woman and her husband authorizing the procedure. Better legal thinking supports the view that the procedure is not, in the absence of specific statute forbidding it, a crime. And it follows, from well-established principles, that a criminal proceeding will not lie against the doctor for performing the procedure.

The physician also asks if the procedure is adultery. If it is, what is his position in the eyes of the law for having participated in such adulterous relation? It may be said with some degree of assurance, although the statute of the particular state is final authority, that the procedure is not the crime of adultery. By and large, criminal statutes use such expressions as "if any man and woman shall live together in an open state of adultery" or such adjectives as "open" or "notorious" or "cohabit" to define conduct that constitutes the crime of adultery. It is a rule of statutory construction that criminal statutes are to be construed strictly. Thus, in the procedure of heterologous artificial insemination, where there is no cohabitation, openness, notoriety, or living together between the mother and the donor, one of the essential elements of the crime is absent.

Adultery, however, is not subject to the same precise, statutory definitions when used in connection with civil law procedures, particularly in actions of divorce and in descent and distribution proceedings. For example, a relationship between a woman and a man not her husband might be adequate to sustain a decree of divorce but totally insufficient to sustain a prosecution for the crime of adultery.

Were a woman fecundated in an extramarital relation her husband could, under the laws of some of the states, obtain a divorce on the ground of adultery, and the child would be illegitimate. If a woman, desirous of motherhood and precluded therefrom because of the disability or absence of her husband, were to achieve conception in an extramarital relation without her husband's consent it is believed the same holding would obtain. No case has come to the attention of the Law Department of the American Medical Association in which conception was accomplished naturally by a man other than the husband, with the husband's consent. Not only do questions of substantive law, such as the definition of adultery, becloud the issue; questions of adjective law, that is, questions of procedure and evidence are also involved, which depend for answers on the statute and common law of the individual state. Some states, for example, will not permit the introduction of testimony in a divorce action the effect of which would bastardize the child. Generalization is as impossible as it is dangerous. The questions remain: At

1. Field, F. O.: Artificial Insemination, Bull. Los Angeles County M. A. 85:23 (Jan. 6) 1955. Legal Opinion, J. Michigan M. Soc. 53:1414 (Dec.) 1954.

2. Artificial Insemination and Illegitimacy, editorial, J. A. M. A. 112:1832 (May 6) 1939.

3. Seymour, F. I., and Koerner, A.: Medicolegal Aspect of Artificial Insemination, J. A. M. A. 107:1531 (Nov. 7) 1936.

4. Artificial Insemination, Queries and Minor Notes, J. A. M. A. 110:1857 (May 28) 1938. Tucker, F. B.: Legal Problems of Artificial Insemination, Woman Lawyers J. 33:57 (Spring) 1947. Seashore, R. T.: Artificial Impregnation, Minnesota Med. 21:641 (Sept.) 1938. Greenhill, J. P.: Artificial Insemination: Its Medicolegal Implications: A Symposium: Medical Aspects, Am. Pract. 1:227 (Jan.) 1947. Schlemer, J. H.: Artificial Insemination and the Law, J. Michigan M. Soc. 52:418 (April) 1953. Fitts, O. C.: Revelations Telegenesis, Proc. Vermont Bar A. 43:17, 1949. Stewart, W.: What Should the Doctor Know About Exogamous Artificial Insemination, Problem Clinic, J. Am. M. Women's A. 9:368 (Nov.) 1954.

civil law, is the procedure permitted? Is it adultery? If the procedure is adultery might the physician and donor be named by the husband as co-respondent in an action for divorce against the wife?

If the donor is the husband of the woman inseminated artificially, the application of the ordinary laws relating to malpractice will probably be sufficient to protect the rights of all parties. The child, if one results, will unquestionably be legitimate, and, if the physician exercises due diligence, uses ordinary knowledge and skill and his best judgment, and respects the confidence of his patient, he will probably not be liable for damages even though the resulting baby be defective. What constitutes due diligence, ordinary knowledge, and skill will depend on the accepted practice at the time in the community in which the artificial insemination is performed, or in a similar community, among physicians engaged in or holding themselves out as ready to engage in the practice.

When the physician uses semen from a donor other than the husband, there is a possibility that complications may arise. In such cases the law must be applied to a novel situation, but certainly the physician assumes a certain degree of responsibility as to the suitability of the donor.[5] In selecting a donor, or in passing judgment on the fitness of a donor, the physician assumes responsibility, the nature and limits of which have not been determined by statutory law or defined by the courts. What the law requires of him in the way of investigation of the suitability of a prospective donor, from the standpoint of heredity and present physical condition, and how far he will be held liable for errors of judgment in vouching for the fitness of the proposed donor, no one can say with any degree of certainty. It might reasonably be asked in this connection whether the physician who performs the procedure must make a more thorough examination of the donor than the state premarital examination law requires of an applicant for a marriage license.

How far the courts will recognize a right on the part of a woman who is to be inseminated and of her husband, to assume by express contract the risks of unsatisfactory results due to the unfitness of the donor is impossible to say. A patient may, by express agreement, relieve a physician of some of the obligations imposed on him by the usual implied contract for medical services but not all of such obligations. How far the law will permit a woman or her husband to assume the risks of the fitness of a donor, which is a matter that is, or should be, peculiarly within the knowledge of the physician is uncertain.

With increasing use of the procedure, if it has indeed increased, courts may expect to find from the testimony of competent medical witnesses, who may be offered as experts, what degree of skill and care is possessed and exercised by physicians who engage in the practice and a standard may be established on which an evaluation of the physician's responsibility may be made. A review of medical literature on the subject reflects that the procedure is no longer experimental. Scientifically, it is an established procedure. Indications, contraindications, techniques, refinements, and experiences are discussed in medical literature [6] and are available to the doctor who wishes to weigh and consider the procedure from the medical and scientific point of view and to elect whether in a given instance it is the proper therapy for his patient. One writer on the subject has written to the Law Department suggesting that human artificial insemination is not properly the practice of medicine within the traditional definition of diagnosing, prescribing for or treating human injury, defect, or disease. He suggests that if a woman has a compulsive urge to motherhood it is just as reasonable to urge her to divorce a sterile husband and marry a fertile one; and that the essence of the practice is the use of science to satisfy a desire or craving without therapeutic justification. He asks: "Is medical training necessary to perform the mechanical techniques of the procedure?"

It seems reasonably clear, that if the purely legal aspects of the procedure were resolved, the application of the laws relating to malpractice would pose no more of a medicolegal problem than would result, were litigation to be predicated, for example, on the use of a new operative technique or the use of a new anesthetic.

COURT CASES

A Canadian case decided in 1921, Orford vs. Orford (49 Ontario Law Reports 15), involved an alleged case of artificial insemination performed in England on a woman whose husband was in Toronto, Canada. While the question was not definitely determined by the court, it was strongly intimated that a woman who submits to an artificial insemination without the consent of her husband, the donor being a man other than her husband, commits adultery. The court in its dicta described adultery as "the voluntary surrender to another person of the reproductive powers or faculties of the guilty person."

Another case arose in New York in 1947, Strnad vs. Strnad (78 NYS [2d] 390). The court had previously granted a decree of separation to a wife and had authorized the husband to have week-end custody of a child born to the wife. The wife subsequently asked the court to amend the decree on the ground that the child resulted from an artificial insemination, the donor being a person other than the husband, and that therefore the husband was not the father of the child. In the written opinion of the Supreme Court of New York County, New York (a trial court of general jurisdiction), it was assumed that the plaintiff was artificially inseminated with the consent of the defendant and that the child was not of the blood of the defendant. Predicated on that assumption the court concluded, in part, as follows:

"The child has been potentially adopted or semi-adopted by the defendant. In any event, in so far as this defendant is concerned, and with particular reference to visitation, he is entitled to the same rights as those acquired by a foster parent who has formally adopted a child, if not the same right as those to which a natural parent under the circumstances would be entitled.

"It is the opinion of this court, assuming again that the plaintiff was artificially inseminated with the consent of the defendant, the child is not an illegitimate child. Indeed, logically and realistically the situation is no different from that of a child born out of wedlock who by law is made legitimate upon the marriage of the interested parties.

"The court does not pass on the legal consequences in so far as property rights are concerned . . . nor does the court express an opinion on the propriety of procreation by the medium of artificial insemination." [7] In August, 1939, Mrs. Strnad acquired legal residence in Oklahoma and there filed suit for a divorce. (The New York proceeding was for separation.) She was granted a divorce and the custody of her child by an Oklahoma court. This procedure was not in conflict with the previous action in New York, but rather an adjudication by an Oklahoma court of a matter over which it had jurisdiction. The question of legitimacy was not at issue and the question of right of custody was not contested.

In a case (Ohlson vs. Ohlson) decided in November, 1954, by the Superior Court of Cook County, Illinois, the plaintiff in an action for divorce alleged that her child was the result of heterologous artificial insemination and offered some evidence in support of her contention. Relying on the almost axiomatic legal principle that a child born in lawful wedlock is presumed legitimate, the court found that the presumption of legitimacy was not overcome by the evidence introduced in the case and a finding on the issue of artificial insemination became unnecessary.

Reference is occasionally made in medicolegal literature to several English cases. Among these is Russell vs. Russell (13 British Ruling Cases 246, 1924 AC 687) decided by the House of Lords in 1924. There was but one issue to be decided: Is the husband's evidence of nonaccess inadmissible?

It was held that evidence that would bastardize the child might not be received. This opinion was written in 1924 when artificial insemination procedures were neither notorious nor the subject of any appreciable number of legal or medical articles. In his opinion, Lord Dunedin said, "fecundation ab extra, I doubt not, is adultery." Had artificial insemination been directly involved the statement might have some persuasive effect; however, since the question was whether the wife conceived as

5. Russell, M.: Artificial Insemination: Plea for Standardization of Donors, J. A. M. A. 144:461 (Oct. 7) 1950. Guttmacher, A. F.: Role of Artificial Insemination in the Treatment of Sterility, ibid. 129:442 (Oct. 10) 1942.

6. Seymour, F. I., and Koerner, A.: Artificial Insemination: Present Status in the United States as Shown by a Recent Survey, J. A. M. A. 116:2747 (June 21) 1941.

7. Problems in Artificial Insemination, Editorial, New York J. Med. 48:600 (March 15) 1948.

the result of a sexual relation with a man not her husband the expression "fecundation ab extra" cannot reasonably be construed to apply to an artificial relation within wedlock, which was at the time but little known or practiced.

In L vs. L (1 All E. R. 141), decided in 1948, a decree of nullity was granted to a wife on the ground of her husband's incapacity to consummate the marriage, although the wife had borne a child after having been artificially inseminated with her husband's semen. Evidence established that the husband was psychologically unable to have normal sexual relations with his wife. It was further established that he had consented to the artificial insemination to satisfy his wife's desire for a child and her hope that normal relations might be established. Although the marriage was set aside as null and void and the child held to be illegitimate the case can only be taken as authority for the principle that, under English law at the time, artificial insemination of a wife with her husband's semen, normal intercourse being impossible, did not consummate a marriage. The issue was: What consummated a marriage; not the legality of artificial insemination. The English "Law Reforms Act" of 1949 effectively overruled the effect of these and related decisions concerning testimony of nonaccess and consummation of marriage.

LEGISLATION

No legislation has been enacted in any of the states that deals specifically with the several aspects of artificial insemination although bills on the subject have been introduced in the legislatures of six states: New York (1948 and 1950), Virginia (1948), Wisconsin (1949), Indiana (1949), Minnesota (1949), and Ohio (1955).

The New York proposal of 1948 contained the following provision: "A child born to a married woman by means of artificial insemination with the express or implied consent of her husband shall be deemed the legitimate, natural child of both the husband and wife for all purposes, and such husband and wife and child shall sustain toward each other the legal relation of parent and child and shall have all the rights and be subject to all the duties of that relationship including the rights of inheritance." The New York proposal of 1950 contained a similar section, plus a provision to the effect that consent to the procedure should be filed with the county clerk.

The Virginia proposal provided simply that the children born as a result of artificial insemination should be considered the same as legitimate children for all purposes if the husband of the mother consented to the operation.

The Wisconsin and Indiana bills declared a child so conceived to be legitimate and to have full rights of inheritance. In addition, the Indiana bill provided that the physician and the mother of the child should retain copies of the consent to the procedure, while the Wisconsin bill provided the consent should be filed with the registrar of probate.

In Minnesota, three bills were introduced in the house of representatives and three companion bills were introduced in the state senate. One pair provided that artificial insemination is unlawful but that children so conceived are legitimate; another that artificial insemination is lawful if the husband's semen alone is used; and the third that the procedure is lawful. In the latter bill, provisions were set forth regulating and controlling the performance of the operation; mother and donor would have to be found free of a disease, affliction or imperfection likely to be communicated to or inherited by the child; the doctor must be of the opinion that the donor resembles the husband in physique, appearance, and temperament and that the donor's and donee's blood be compatible; and that donor be not nearer in kin to the donee than second cousins.

The Ohio bill, introduced in the Senate in January, 1955, provides: "No female person shall submit to heterologous artificial insemination nor shall any person or persons perform or assist in the heterologous artificial insemination of any female person, in this state. Any child conceived in violation of this section shall be born out of wedlock and illegitimate. Whoever violates this section shall be fined not more than five hundred dollars and imprisoned not less than one nor more than five years."

The Sanitary Code of the City of New York was amended effective July 1, 1947, to impose certain restrictions on the use of donors for artificial insemination. This amendment and the regulations issued pursuant to it, required, among other things, that a donor be given a complete physical examination; that donors found to be suffering from specific conditions may not be used; that the blood of the donor and donee be typed with respect to the Rh factor; and that the physician performing the operation prepare records showing compliance with these requirements.

CONCLUSIONS

Artificial insemination is indeed a parvenu [8] in the field of law. There is nothing in the common law from which we may find precedent to answer the unknowns created by the procedure. Narcoanalysis, lie detectors, chemical tests for intoxication, by way of comparison, although created and developed by science in the 20th century, may be measured by age-old precedents against self-incrimination and due process. Artificial insemination is an operation, or a procedure, or a practice developed chiefly in the field of animal husbandry and has been applied by doctors of medicine to human beings. May osteopaths, chiropractors, naturopaths, and others also use the practice? May a layman, as a "marriage counselor" or "family consultant" utilize the procedure? May a veterinarian? It is a practice that is used to create a life that otherwise would not have come into being.

Presently, only a comparatively small number of people are directly affected by the unknown medicolegal and legal implications of this procedure. If Seymour and Koerner's figures [6] are accepted as the number of births in one year—and it is neither indicated nor understood that the figures are for a single year—it would follow that but 0.003 to 0.001% of all births in the United States (estimated at about 4 million in 1954) would result from this procedure. Although these problems are limited to a few, they are of importance to the children who so result and to the physician who uses the technique.

It is axiomatic that hard cases make poor law. In the absence of precedent and without a legislative declaration of public policy, it can only be stated that each case that reaches the courts will be decided on its own merits. Further, there is no assurance that litigation on this subject will be of such frequency as to afford courts opportunity to resolve the legal unknowns. Legislation would seem to be clearly indicated.

8. A Parvenu Intrudes on Ancient Law, Comment, Yale Law J. 481 457 (Feb.) 1949.

MEDICAL FILM REVIEWS

Functions of Carotid Sinus and Aortic Nerves: 16 mm., color, sound, showing time 71 minutes. Produced in collaboration with the Department of Physiology, University College, London, England. Procurable on loan from the Film Library, Imperial Chemical Industries (New York) Ltd., 521 Fifth Ave., New York 17.

Part 1 of this film, entitled "Pressoreceptors," begins with Czermak's observations in 1866 and passes on to the effects on blood pressure of clamping the carotid arteries with and without section of the depressor or aortic nerves. The anatomy and histology of the carotid sinus is then demonstrated on the living animal and by diagram. This is followed by a similar series of demonstrations showing the anatomy of the aortic arch, the carotid sinus nerve and its embryologic development, the aortic nerve, and the histology of the carotid sinus nerve. The effect carotid sinus nerve and its embryologic development, the aortic nerve is shown. The fall in blood pressure on stimulation of the aortic nerve is also shown in the cat. Comparable results in the cat are shown following stimulation of the carotid sinus nerve. The experimental set-up and the perfusion equipment, together with its oxygenator, are demonstrated. The dramatic fall in arterial pressure and the slowing of the heart rate resulting from a rise in the perfusion pressure of the carotid sinus preparation in the dog are then shown. Part 1 concludes with a diagrammatic reinterpretation of Czermak's classical experiment and a diagram summarizing the relationship between receptors, centers, and peripheral effector organs.

Part 2 is entitled "Chemoreceptors" and consists of a series of simple demonstrations on the functions of the chemoreceptors. The experimental arrangements enabling different gas mixtures to be administered to a cat are shown. Then follows a demonstration on the effects of changes in hydrogen ion concentration by an intra-arterial injection of lactic acid. A sequence follows that demonstrates that a mild degree of oxygen lack produces a slight but persistent respiratory stimulation, while an intensification of the oxygen lack shows a more vigorous respiratory response. The effects of cyanide injection, before and after chemoreceptor denervation, are shown, and the effects of electrical stimulation on the cat under chloralose anesthesia are demonstrated. At the end of this part of the film, there are animated diagrams recapitulating the main conclusions that can be drawn from these demonstrations. Some of the anatomic details are sketchy, and some of the physiological details are repetitious, while other obvious details of carotid sinus physiology are omitted. The accurate division of the film into two parts follows the known division of functions and serves to emphasize the existence of two functions of the carotid sinus. This is an effective teaching film and would be particularly useful for showing to physiologists, pharmacologists, internists, anesthesiologists, and medical students.

Therapy with Cortone: 16 mm., color, sound, showing time 36 minutes. Produced in 1953 by Audio Productions, New York, for and procurable on loan from Merck and Co., Rahway, N. J.

This film shows results of cortisone (Cortone) therapy in five patients suffering respectively from rheumatoid arthritis, rheumatic fever, pemphigus, bronchial asthma, and acute traumatic iritis. In addition to the presentation of this clinical material, which occupies the major portion of the film, animation sequences are employed to show in graphic form the dosage regimens employed for the case material presented. The continuity is particularly bad in the handling of the rheumatoid arthritis sequence. The film opens with the return of a rheumatoid arthritic to work and then shows him in a flash back several days earlier during an acute phase at his physician's office. The case is then dropped precipitously, and not until several other conditions have been discussed is it again brought back for reconsideration. During the discussion of the various disease states for which cortisone is effective, the hint is definitely left that the lack of endogenous adrenocortical hormone supply may be responsible for the clinical syndromes. The danger of adrenal hypoplasia with continued high dosage is not mentioned, although its occurrence clinically has been reported. Particularly annoying is the voice of the narrator during the demonstration of heart sounds in the case of rheumatoid arthritis. In this same case, the boy's face, in color, appears plethoric, blotchy, and rather moon-shaped, which would make one suspicious of a Cushing-like change. The report states, however, that the gain in weight was normal. This film would benefit by adroit and plentiful editing. Although the photography is excellent, the opening music is distracting, and there are many instances in the picture where irrelevant scenes are used simply to cover narration. In its present form, this film is not recommended.

Children with Nephrosis (Cleared for television): 16 mm., color, sound, showing time 12 minutes. Produced in 1954 by Campus Film Productions for the National Nephrosis Foundation under the medical supervision of Robert B. Cooke, M.D., Yale University. Procurable on loan from National Nephrosis Foundation, Inc., 1123 Broadway, New York, or Pfizer Laboratories, Division of Chas. Pfizer, Inc., 630 Flushing Ave., Brooklyn 6, N. Y.

The purpose of this film is to inform the general public of the existence and characteristics of nephrosis in children and to facilitate the work and growth of the National Nephrosis Foundation, Inc. It shows the insidious onset and some of the physical and laboratory findings in one case of nephrosis, while other children with nephrosis illustrate the course of the disease and some of its complications. Infections and kidney damage endanger the lives of these children. In recent years, infections have been controlled through the use of antibiotics such as oxytetracycline (Terramycin), enabling a natural process of recovery in as many as 50% of these cases. The massive swelling can also be reduced with hormone treatment. The film touches upon the parents' problem of living with these chronically sick children and the need for funds for hospital facilities and continuing research so that more of these children will live. This film presents a nice picture of the relationship between the physician, the child, and his parents. It points out quite well some of the laboratory procedures that are necessary in helping the physician arrive at his diagnosis, control, and treatment. This excellent picture is recommended for PTA meetings and other parent groups.

The Life Cycle of the Malaria Parasite: 16 mm., color, sound, showing time 20 minutes. An Imperial Chemical Industries production made in collaboration with Col. H. E. Short, C.I.E., M.D., Ch.B. Executed by the W. M. Larkins Studio in association with the Film Producers Guild. Procurable on loan from Imperial Chemical Industries (New York) Ltd., Film Library, 521 Fifth Ave., New York 17.

This film is both artistically and technically a superb representation of the life cycle of the malaria parasite in its developmental stages, both in man and in mosquito. The scientific information is formulated in an interesting and lucid manner. The first section of the film deals with the complete cycle of the malaria parasite in man, including development in the blood and tissues of the liver. The author's theories as to cause of relapse are clearly presented in animation. The major clinical manifestations of each form of malaria are also correlated with the development of the parasite. The last part of the film deals with the different histological characteristics of the blood stages that are found in the four types of human malaria. These differentiations are important both in diagnosis and in prognosis. The main aspects of the film are summarized quickly at the end.

One hesitates to criticize a film as well conceived and presented as this. Nevertheless, the failure of the authors to distinguish clearly between facts that have been clearly established without controversy and those that represent newer concepts still under study and less firmly established constitutes a minor defect in presentation. The editing of this film is so excellent that it should prove of great interest and value in teaching medical students or physicians the major aspects of the parasitology of human malaria. The film is too technical for instruction of the layman and adds no new concepts that would make it of interest to the specialist.

The Management of Obesity: 16 mm., black and white, sound, showing time 24 minutes. Prepared by Norman Jolliffe, M.D., New York. Produced in 1954 by Fordel Film Laboratories for and procurable on loan from E. R. Squibb & Sons, 745 Fifth Ave., New York 22.

This is a lecture film in which Dr. Norman Jolliffe, director of the bureau of nutrition, department of health, city of New York, discusses in detail the diagnosis of obesity and its treatment. He states that obesity is invariably caused by a greater intake of calories in food than expenditure of calories in energy and that all means of reducing obese persons of excess fat are effective only insofar as they aid in producing and maintaining a calorie deficit. He mentions that the following essentials should be provided in prescribing a reducing diet: (1) sufficient high value protein to prevent the wasting of vital body tissues; (2) sufficient carbohydrates in the reducing diet to prevent too-rapid burning of body fat; (3) sufficient minerals and vitamins to insure optimum health, or a supplement if the diet does not contain sufficient of these nutrients; (4) a diet that is psychologically acceptable to the reducer; and (5) dietary reeducation to provide that proper eating habits will continue after the patient has reduced. This is a good, conservative, instructive film, and, generally speaking, scientifically accurate. There is a good deal of narration throughout the film; however, this does not detract from its usefulness. It is highly recommended for general practitioners.

MISCELLANY

VACCINE FOR POLIOMYELITIS

On April 12, 1955, at Ann Arbor, Mich., there was released a report on the evaluation of a field trial of the use of a vaccine for the prevention or modification of anterior poliomyelitis. This is the so-called Salk vaccine, a name applied to it because of the work of Dr. Jonas E. Salk of Pittsburgh. The report was prepared under the direction of Dr. Thomas Francis Jr. and was sponsored by the National Foundation for Infantile Paralysis. It represented an impressive investigation and presented an amazing amount of material, much of which was raw data available for critical review and analysis by any reader. It is a matter of record to which many will refer for years to come. Unfortunately, because of lack of space, it cannot be reported in detail in THE JOURNAL.

THE JOURNAL published in 1953 [1] a report by Jonas E. Salk on his findings following the use of a vaccine he had developed. This study was conducted on children in the Pittsburgh area. In the autumn of 1953 a decision was made for the National Foundation for Infantile Paralysis to conduct an extensive field trial with the vaccine. The evidence already gathered was suggestive and the study timely. The vaccine was to contain the three known types of virus from cultures of monkey kidney cells and inactivated by Formalin. An independent center was organized at the University of Michigan to gather the data and to analyze them. Field trial areas were selected, plans were made for children in certain grades in school, and a program for the development of adequate records was undertaken. All of the work was placed under the supervision of the Poliomyelitis Vaccine Evolution Center at Ann Arbor. There were more than 200 participating study areas in 44 states. Research also was undertaken in Canada and Finland. In the U. S. A. the clinic trial was conducted during April, May, and June, 1954. Approximately 1,800,000 children were involved either as vaccinated subjects or as controls. Efficacy of the vaccine and safety of its use obviously were the two basic questions guiding the study. Clinical observations, examinations of the blood for antigenic response, and other criteria were studied. Also studied were the lots of the vaccines to see if there was significant variation between them.

To summarize briefly the results of an impressive investigation, it was found that some of the batches of vaccines did vary in their elicitation of responses; the response to type 1 poliomyelitis virus was inferior to that for types 2 and 3; and the vaccine did not seem to lessen materially the incidence of poliomyelitis but did lessen the development of the paralytic form (the more severe the complication of poliomyelitis the more effective seemed to be the vaccine). To quote from the Francis report:

"From these data it is not possible to select a single value giving numerical expression in a complete sense to the effectiveness of vaccine as a total experience. If the results from the observed study areas are employed, the vaccine could be considered to have been 60-80 percent effective against paralytic poliomyelitis, 60 percent against Type I poliomyelitis, and 70 to 80 percent effective against disease caused by Types II and III. There is, however, greater confidence in the results obtained from the strictly controlled and almost identical test populations of the placebo study areas.

"On this basis it may be suggested that vaccination was 80-90 percent effective against paralytic poliomyelitis; that it was 60 to 70 percent effective against disease caused by Type I virus and 90 percent effective against that of Type II and Type III virus. The estimate would be more secure had larger number of cases been available."

Dr. Salk is preparing a statement on the use of the vaccine for early publication in THE JOURNAL. At the Ann Arbor meeting he recommended two injections spaced two to four weeks apart and a third or "booster shot" at the end of seven months, as the titer to antibody response seems to decrease several months after two injections. Whether further "booster shots" will be required apparently remains for further study to determine. However, Dr. Salk believes the immunity may last for some time, perhaps even years. There are other questions to be answered, and the field is so big there is room for many to work and almost countless ideas to be explored. For example, the Salk vaccine is made of a killed virus, and yet others are working with a live virus. In fact, at least one center is testing a vaccine administered by mouth. The Salk vaccine is prepared with the use of monkey kidney cells. One other center is using egg yolks as a culture medium. The Salk vaccine offers encouraging protection against the paralytic forms or effects of poliomyelitis. At this time, however, it seems apparent that the so-called Rivers' report reveals poliomyelitis is a strange disease and the Salk vaccine is effective in preventing paralytic poliomyelitis in a high percentage of instances. Perhaps the story can be told simply in the above table (modified from the Rivers' Committee report).

Summary of Study Cases by Diagnostic Class and Vaccination Status (Rate per 100,000)

Study Group	Study Population (1)	All Reported Cases		Poliomyelitis Cases						Not Poliomyelitis*	
				Total		Paralytic		Nonparalytic			
		No. (2)	Rate (3)	No. (4)	Rate (5)	No. (6)	Rate (7)	No. (8)	Rate (9)	No. (10)	Rate (11)
All areas, total	1,829,916	1,013	55	803	47	685	37	178	10	150	8
A. Placebo areas, total	749,236	458	57	358	48	270	36	88	12	70	9
1. Vaccinated	206,745	82	41	57	28	33	16	24	12	25	12
2. Placebo	201,229	162	81	142	71	115	57	27	13	20	10
3. Not inoculated†	339,778	182	54	157	46	121	36	36	11	25	7
4. Incomplete vaccinations	8,484	2	24	2	24	1	12	1	12	...	..
B. Observed areas, total	1,080,680	555	51	445	41	415	38	90	8	80	7
1. Vaccinated	221,568	76	34	56	25	38	17	18	8	20	9
2. Controls‡	725,173	439	61	291	54	320	46	61	8	48	6
3. 2nd grade not inoculated	123,695	66	53	54	44	43	35	11	9	12	10
4. Incomplete vaccinations	9,504	4	40	4	40	4	40	...	..	...	..

* This column may include doubtful cases of poliomyelitis as well as those that were not clearly poliomyelitic.
† Includes 8,577 children who received one or two injections of placebo.
‡ 1st and 3rd grade total population.

1. Salk, J. E.: Studies in Human Subjects on Active Immunization Against Poliomyelitis: I. A Preliminary Report of Experiments in Progress, J. A. M. A. 151:1081 (March 28) 1953.

AERO MEDICAL ASSOCIATION MEETING

Aviators have a robust and benevolent friend in a medical group that is trying to aid in the progress of aviation and to make it less hazardous for those who fly at ever-increasing speed and altitude. This group is the 26-year-old Aero Medical Association, which welcomed some 1,500 persons at its annual meeting in March in Washington, D. C. The program was so attractive that the very last session of the three day meeting was the best attended of all sessions, filling the Presidential Room

of the Statler Hotel to more than its normal capacity. This probably was due to the presence of six famous aviators and test pilots who had made speed and altitude records and who served as a panel that answered questions from the audience. One of these airmen, Major Arthur Murray, U. S. A. F., had flown a plane at a speed of 1,238 miles per hour and, again, higher than any other human being, a mile or more above the 83,235 ft. level reached by a Marine pilot in 1953. The other five members of the panel for years have been flying and testing new types of aircraft in similar daring flights. Thus problems are presented to aviation medicine to aid in devising equipment that will enable the aviator to live in surroundings in which man was never intended by his Creator to enter. It was pointed out in a number of papers that medical men can be of great help in studying these problems cooperatively along with engineers and designers of airplanes and by evaluating the reactions of man to this strange environment.

The program of this meeting was based largely on reports on research projects in aviation medicine that are being conducted by military and civilian agencies throughout the United States. For the uninitiated physician the men in this special field of study have a vocabulary that is confusing because it springs from a knowledge not only of medicine but of physics, chemistry, mathematics, engineering, superaerodynamics, and other sciences.

With the ever-increasing speed of modern aircraft, deceleration becomes a greater problem than it has been in the past, and, to learn more about its effects, an U. S. Air Force officer, Lieut. Col. John P. Stapp, submitted to an experiment on Dec. 10, 1954, on a sled that was propelled forward at a rate of 632 miles an hour and that was decelerated or came to a dead stop in 1.4 seconds. This officer, who wore certain protective gear, came out of the experiment unharmed except for two black eyes and congested conjunctivas.

Others reported on experiments concerned with the health hazards of cosmic rays. Rossi,[1] it was said, pointed out that cosmic ray nuclear particles probably originate as part of the matter ejected by supernovae within our galaxy and are then accelerated by intragalactic magnetic fields over varying paths and periods of time. The primary cosmic ray spectrum was said to include the stripped nuclei of all of the elements hydrogen through iron. Occasionally, heavier nuclei are detected but are not considered a likely health hazard because of their extreme infrequency. An illustration on the screen showed the relative abundance of the various elements in the primary cosmic ray spectrum. Statistically, about 3,000 hydrogen nuclei (protons or beta particles), 300 helium nuclei (alpha particles), and only 0.35 iron nuclei arrive within the same interval of time. The kinetic energy spectrum of primary cosmic radiation observed to date ranges from a minimum of 0.35 Bev per nucleon to 10^5 Bev per nucleon. Another paper brought out that the earth's atmosphere is equivalent to a lead shield of almost a full meter's thickness. If one further realizes, it was said, that the hard component of cosmic radiation penetrates this armor to such an extent that it still accounts for about 25% of the background intensity at sea level, it is immediately visualized how greatly different the background intensities at the lower and upper end of this heavy screen must be.

A report of experiments was presented in which mice, monkeys, and radish seeds were exposed to cosmic rays above 90,000 ft. for a considerable number of hours. The most interesting effect observed to date, the author stated, was the significant increase in frequency of gray hairs on exposed black mice. There was some evidence, he said, that the column of cells damaged by the passage of a particle of primary cosmic radiation through nervous tissue can be demonstrated, but there were no results of these experiments to indicate that cosmic radiation has any biological effect that cannot be explained on the basis of available physical descriptions of the radiation at these altitudes. It was concluded that the results obtained indicated that, for the systems tested, the relative biological effectiveness of primary cosmic radiation is, with the possible exception of the hair-graying effect, not unexpectedly high.

Another speaker considered flight at the upper border of the atmosphere at altitudes of 200,000 ft. and higher. Here air-breathing engines are useless, and big liquid rocket boosters would be used, then dropped after their fuel is exhausted to bring the aircraft to its operational altitude. This author concluded that while hypersonic flight at the upper border of the atmosphere poses many problems, at this time none of them appear to be insurmountable.

Aviators are carefully screened before they are licensed or permitted to fly, and they are comparatively young, but they are sometimes afflicted with diseases that affect ordinary individuals. A speaker reported such occasional diseases in aviators as coronary infarction, hypothyroidism, melanoma, epilepsy, and diabetes—all of which are quite uncommon—and the common cold, which, it was said, is a constant daily problem for the flight surgeon.

An aviation crash injury research project is being carried on at Cornell University, sponsored by the U. S. Navy and Air Force. A paper on this project presented the concept, which is not new, of looking on aircraft injuries from the standpoint of preventive medicine. Years of research have shown most injuries and deaths in survivable accidents are caused by the individual striking some specific objects inside the cabin or cockpit, such as instrument panels, steel tubes in seats, handles, knobs, and other hard objects. Investigation of one such accident showed that about 40% of those killed sustained fatal head injuries from penetration of the skull with sharp steel uprights in the backs of seats. It was emphasized that in the past fatal injuries have been usually listed in a gross manner and that detailed reports have seldom been made on the precise shape, size, and site of injuries, nor have the possible causes of the injuries been reported. Thus, engineers have lacked sufficient information for improving their designing for crash protection. To improve this state of affairs, comprehensive medical data and details of accidents must be obtained from survivable crashes, then analyzed, and results given to safety engineers to use in designing future aircraft and aircraft components. To obtain such information medical men and accident investigators must work together in their investigations and analyses of accidents, the injuries sustained, and the causes of injuries.

An interesting paper was entitled "Aircraft Accidents with Happy Landings." It was said that accidents in which no one is killed or permanently hurt comprise about 85% of all of aircraft mishaps. In one, an engine quit at 3,000 ft., and, while the pilot was trying to land in bad weather, the plane's nose was bashed in by a flock of seagulls, and yet on the third try the craft made a happy landing.

Another happy occasion at the meeting was the honoring of the founder of the Aero Medical Association, Dr. Louis H. Bauer, a cardiologist and a recent past-president of the American Medical Association, who is now secretary-general of the World Medical Association. The first Louis H. Bauer Lecture, established in his honor, was presented at this time by Dr. John F. Fulton, Sterling Professor of the History of Medicine at Yale University.

Preceding the meeting of the Aero Medical Association was the three day meeting of the Civil Aviation Medical Association, first annual meeting of the organization under this name, the previous name having been the Airline Medical Examiners Association. Some of its objectives are to ascertain the basic mental and physical examination of airmen required in civil aviation and to sponsor basic graduate and postgraduate training in aviation medicine as it applies to civil aviation. This organization at its banquet was addressed by Congressman J. Percy Priest of Tennessee on training and research in aviation medicine. One point emphasized at this meeting was that physicians should do all things possible to preserve the health of the present supply of aviation personnel and should help to increase the supply of personnel through new legislation and otherwise encourage young men to become aviators.

1. Rossi, B.: Where Do Cosmic Rays Come From? Scient. Am. 189: 64, 1953.

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Pulmonary Sarcoidosis. L. E. Siltzbach. Am. J. Surg. 89:556-568 (Feb.) 1955 [New York].

Mass chest surveys have shown that pulmonary sarcoidosis in its clinically silent stage is by no means rare. The type and degree of lung involvement and the course the lung lesions take largely determine whether the patient will recover or be left with a significant degree of pulmonary insufficiency and cor pulmonale. The number of patients who eventually suffer from respiratory difficulty is substantial and it is among them that many of the deaths from sarcoidosis occur. The disease is systemic and may affect almost any organ, but sarcoidosis of the lung is recognized as having prime importance in both diagnosis and prognosis. The eyes are the only other organ comparably affected. Evidence of mediastinal node or pulmonary involvement at some point in their illness was found in 123 of 134 patients with sarcoidosis seen at Mt. Sinai Hospital over a nine year period. The records of these patients showed six deaths from pulmonary sarcoidosis, in which the immediate cause of death was pulmonary insufficiency. Dyspnea is a handicap to 18 of the living patients and is severe enough to be almost wholly incapacitating in 6. Some loss of vision was suffered by 26 patients, and in 6 blindness in one or both eyes was the result. Scalenus fat pad biopsies and the Nickerson-Kveim intracutaneous reaction are valuable diagnostic aids when the involved tissues are not easily accessible for biopsy verification. Three broad chronologic stages, early, transitional, and late, can be recognized in the development of the intrathoracic lesions as shown by the roentgen pattern present on the initial chest film. The early or florid stage has three subdivisions, corresponding to three distinct patterns seen in the chest films: (1) bilateral symmetric hilar node enlargement, with or without enlargement of the tracheobronchial and paratracheal nodes; (2) widely disseminated or localized fine miliary and occasionally gross miliary nodulation in both lung fields with hilar node regression or persistence; and (3) diffuse fluffy bronchopneumonic patches usually accompanied by some nodal enlargement. The outlook in the early stage is best for the patients in subdivision 1 and increasingly less favorable for those in 2 and 3. Patients with disease in the transitional and late or fibrotic stages often show disabling symptoms, and five of the six deaths caused by pulmonary sarcoidosis were in patients with pulmonary lesions in these stages. No treatment is needed for patients with early-stage lesions limited to the mediastinal nodes, because such lesions usually regress spontaneously. Cortisone and corticotropin generally have a favorable, though temporary, effect on intrathoracic sarcoidosis, and they may be the only means of tiding a patient with severe pulmonary insufficiency over a crucial period. The advisability of the use of cortisone and corticotropin in patients with asymptomatic miliary nodulation or bronchopneumonic patches is still open to question because of their fibrosis producing action. Pulmonary fibrosis may proceed even while the patient is receiving the hormones. Failure to treat the patient, however, may eventually lead to a more severe pulmonary insufficiency than that caused by the fibrosis. The experience in this series shows that early lung infiltrations even though asymptomatic may lead to a crippling of respiratory function. Present indications for hormone therapy in extrathoracic lesions consist of (1) ocular manifestations, no matter how slight; (2) a febrile course and marked weight loss; (3) central nervous system or cardiac involvement; (4) disfiguring cutaneous and superficial lymph node lesions; and (5) persistent hypercalcemia.

Treatment of Pulmonary Tuberculosis by Extremely Prolonged and Continuous Antibiotic Therapy. E. Bernard, B. Kreis, J. Chrétien and J. L. Jullien. Semaine hôp. Paris 31:307-312 (Jan. 22) 1955 (In French) [Paris, France].

The history of antibiotic therapy of pulmonary tuberculosis since the appearance of streptomycin in 1947 is reviewed. The view that this sort of treatment should be prolonged and continuous is defended on the basis of clinical and experimental evidence and histobacterial studies of surgical specimens. Length of treatment plays a greater role in the patient's recovery than does the particular association of medicaments chosen. Results of prolonged continuous treatment are diminishing the number of cases in which pneumothorax or exeresis have to be carried out.

Clinical Reality and Pathogenetic Importance of Tracheobronchial Tuberculosis. M. Domenici and G. Gunella. Gior. clin. med. 35:1372-1397 (Nov.) 1954 (In Italian) [Bologna, Italy].

Bronchoscopic studies have indicated that tracheobronchial tuberculosis is much commoner than it is thought to be, especially in patients with pulmonary tuberculosis. The condition can be an autonomous process or one concurrent with, or secondary to, pulmonary tuberculosis. Some authors have found primary tracheobronchial lesions in infants only a few months old, but these are rare cases. They are found more often during the primary tuberculous infection and are then secondary to the lesions of the hilar and mediastinal lymph nodes. The susceptibility of the bronchi to tuberculosis in infants depends not only on a relative weakness of the bronchial structure in that age but also on the relation of contiguity or proximity that links the bronchi to the hilomediastinal lymphatic system. The secondary involvement of the bronchi may occur in various ways and its severity may vary. In some cases it is an edematous, exudative vasomotor reaction; in others the hyperplastic lymph node presses against and obliterates the bronchus causing a bronchial stenosis; and in other cases the caseous lymph node opens into the bronchial lumen and causes a bronchial fistula. This fistula is followed by contamination of the lung parenchyma through the canalicular route, with lesions that sometimes can be extensive and fatal. Even more important are the specific bronchial forms that occur concurrently with the common chronic postprimary tuberculosis. These forms are commoner than those found in infants and are affected by the course of the coexisting pulmonary condition, which they in turn influence unfavorably. Although the true incidence of bronchial tuberculosis in patients with postprimary tuberculosis has not been determined as yet, some authors, on the basis of anatomic and histological studies, have stated that it is present in more than 70% of such patients. This secondary condition is not only of canalicular origin. The pathological matter from the ulcerative pulmonary lesion infects along its way the bronchial mucosa and causes specific lesions, especially if the mucosa is not anatomically and functionally sound. In other cases the specific process appears at the mouth of the segmental bronchi after it progressed from the periphery to the hilus of the lobe along the draining bronchus. When the pulmonary lesions are not exudative, either a hematogenic or a lymphogenous origin of the bronchial lesions must be considered. The prognosis of these associated conditions varies according to the location, pathogenesis, and anatomicopathological constitution of the bronchial tuberculosis. The two processes, of which the pulmonary one is rather severe, exert on each other a harmful influence. Except for the stenosis, chemotherapy improves the prognosis of both

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conditions, but when they are associated the prognosis is grave, and this is not only because of the mechanical and dynamic effects of the stenosis but also because of a biological factor. There is, according to the authors, a general immunologic deficit that prevents the humoral and histogenic defensive reaction. It may be that the presence of the bronchial complication is a reliable indication of such deficit, which is even greater if the bronchial lesions did not respond to chemotherapy and antibiotics and if these lesions are located in the large bronchi.

A Five-Year Follow-Up Study of Sixty-Four Tuberculous Patients Treated with Streptomycin in 1947-1948. J. Monroe, N. S. Lincoln, R. Horton and F. L. Armstrong. Am. Rev. Tuberc. 71:193-200 (Feb.) 1955 [New York].

Of 64 patients between the ages of 13 and 63 years, in whom the men were outnumbered two to one and who were treated with streptomycin between 1947 and 1948 at four of the New York State tuberculosis hospitals, 3 had minimal disease, 33 moderately advanced disease, and 28 far-advanced disease. In all but one patient the disease was classified as active, and Mycobacterium tuberculosis was isolated from the sputum of 62 patients at the start of the original period of treatment with streptomycin. Seventeen patients received 1 gm. of streptomycin in one dose daily for 56 days, another 17 received the same daily dose for 90 days, and still another 17 received 1 gm. of streptomycin twice daily for 90 days. The remaining 13 patients were on miscellaneous regimens that varied from 1 gm. of streptomycin each two days to 1 gm. twice daily for from 90 to 180 days. All the patients were followed up for five years. During the original period of treatment with streptomycin, the pulmonary lesions of 8 patients (12.5%) did not show any change, in 3 (4.7%) the lesions became worse, and in 53 (82.9%) the pulmonary lesions were improved. The outcome was more favorable in those patients who had been treated for the longer periods of time. Twelve of the 64 patients died; these deaths occurred among those patients who showed either "no change" or only "slight improvement" during the original period of treatment with streptomycin. Ten of these 12 patients had active tuberculous complications. Of the 52 patients who were alive at the end of the five-year follow-up period, the disease was classified as inactive or arrested in 38, and in 14 as active or of undetermined activity. As viewed in the light of subsequent experience, the original courses of streptomycin therapy employed were obviously not adequate to be considered definitive treatment. Of the 38 patients with inactive or arrested disease, 26 (i. e., 40.6% of the original 64 patients) received retreatment with antimycobacterial agents, and medical collapse or surgical treatment was practiced in 33. The development of tuberculous complications was not prevented by the streptomycin and other treatment employed.

Observations on and Results of BCG Vaccination with the Swiss Vaccine. T. Baumann. Schweiz. med. Wchnschr. 85:102-104 (Jan. 29) 1955 (In German) [Basel, Switzerland].

Since August, 1953, BCG vaccination has been carried out in the Swiss canton of Aargau on a voluntary basis and free of charge, while the expenses were paid from the tuberculosis tax, a 3% additional duty to the federal tax. The population between the ages of 2 and 40 years was called up, and about 50% submitted to vaccination. One hundred per cent of the infants and school children were subjected to a prevaccination Moro patch test, and 90% of those with a negative reaction to the test were vaccinated within 72 hours after the negative result of the test. Between August, 1953, and September, 1954, a total of 35,377 pre and postvaccination tests and 20,400 BCG vaccinations were performed with the Swiss vaccine (Berna BCG). Of a group of 1,500 persons, consisting of suckling infants, school children, and adolescents, 18 (1.2%) had a negative reaction to the Mantoux test, which was performed with 100 tuberculin units six to eight weeks after the intracutaneous vaccination in the upper arm with 0.1 cc. of vaccine, i. e., with approximately 8 million bacteria. After a second BCG vaccination these 18 persons also turned positive. Of a second group of 1,427 school children between the ages of 7 and 16 years, only one (0.07%) had a negative reaction to the Mantoux test (100 tuberculin units) 12 to 13 months after the vaccination. That means that the vaccine practically had "taken" in 100% and that it was still effective one year after the vaccination. Postvaccination tests showed variations in the degree of the cutaneous allergy resulting from the BCG vaccination; depending on the age group, 83 to 95% had a positive reaction to the Moro patch test; an additional 2 to 11.8% had a positive reaction to the Mantoux test performed with 10 tuberculin units (purified protein derivative), and the remaining 2.58 to 4.87% had a positive reaction to the Mantoux test only when performed with 100 tuberculin units. The cutaneous allergy was somewhat weaker in the persons vaccinated with BCG than in those with a spontaneous infection. Postvaccination Mantoux tests with 100 tuberculin units revealed a notably weak reaction, which perhaps might permit the conclusion that with such a weak reaction one has to deal with a pure vaccination allergy and not with a superinfection allergy. Results of postvaccination tests showed that the capacity of suckling infants for the development of cutaneous allergy was the same as that of children of more advanced age. The incidence of complications caused by the Swiss BCG vaccine was low; of 13,010 vaccinated persons, 39 had a somewhat severer and prolonged exudative process in the vaccination area which healed with the aid of a dry dressing within several weeks; there were 14 cases of swelling of lymph nodes but without real complaints; breaking down occurred in 6 cases of enlarged lymph nodes, and healing with a small scar took place within four months. Not a single case of "BCG-itis" was observed.

Considerations Concerning Several Cases of Tetanus. R. Montant and G. Mottironi. Schweiz med. Wchnschr. 85:108-111 (Jan. 29) 1955 (In French) [Basel, Switzerland].

Seven cases of tetanus are described in four women between the ages of 20 and 62 and in three men between the ages of 16 and 75 who were treated at the second surgical clinic of the university in Geneva, Switzerland. Four patients died; the period of incubation in these patients was 4, 7, 11, and 18 days respectively; three patients recovered; the period of incubation was 10 days in two and was not determined in one. The authors believe that the period of invasion, that is the time that elapses between the appearance of the first sign of the disease and the occurrence of the first generalized spasms, permits a better evaluation of the severity of the toxic infection than the incubation period does. The period of invasion in the four fatal cases was 20 hours, 24 hours, 24 hours, and 4 days respectively; in the patients who recovered, it was 3 days, 4 days, and 4 days respectively. Of the four patients who died, tetanus developed after surgical intervention (hemicolectomy), abortion, a self-administered injection of a drug into the gluteal muscles, and after an injury of the palm respectively. The demonstration of Clostridium tetani in the feces of the patient with hemicolectomy raised the question of the intestinal origin of postoperative tetanus. Death resulted from cardiac arrest after several hours of paroxysmal tachycardia in the patient with abortion, and cardiac arrest also occurred in the patient who had given herself an injection into the buttocks. In these two cases death probably was caused by the influence of the toxins of the pathogenic agent on the myocardium. Of the three patients who recovered, tetanus had occurred in one after cholecystectomy and surgical intervention for umbilical hernia; one patient was an agricultural worker who had scratches and cutaneous sores on his hands, and one with cephalic tetanus had sustained an injury of the conjunctiva of the left eye in an accident. All patients were given massive doses of antitetanus serum by intramuscular and partly by intravenous route, and that was preceded by injections of fractionated doses of Besredka's antivirus. The antitetanus serum therapy was combined with injections of Ramon's anatoxin, given at a different site than that of the serum therapy. Causal treatment also included administration of antibiotics, particularly penicillin combined with streptomycin. Concerning symptomatic treatment, the use of such sedatives as amobarbital (Amytal) sodium and a proprietary preparation of amylene hydrate in a tribromoethanol solution (Rectanol) proved rather disappointing, while the skeletal muscle relaxant mephenesin in doses of 6 gm. in 500 cc. of 5% dextrose and administered by intravenous drip was highly effective. The authors agree with Herzon and associates on the indications for early tracheotomy

particularly in patients with spasms of respiratory muscles, absence of cough reflex or reflex of deglutition, and with laryngeal obstruction. The authors stress the importance of the findings by the French worker Boyer and his associates, according to whom prophylactic anatoxin vaccination against tetanus provides protection for three years only. Booster injections should be given not only one year after the vaccination but in addition every three to four years afterwards.

Hypercalcemia and Renal Impairment Following Milk and Alkali Therapy for Peptic Ulcer. J. G. Ogle and C. M. Harvey Jr. South. M. J. **48**:126-129 (Feb.) 1955 [Birmingham, Ala.].

The occurrence of renal impairment associated with systemic alkalosis is reported in a 57-year-old man with peptic ulcer who had been placed on a strict regimen consisting of milk and cream every hour, 1 gm. of calcium carbonate every hour (15 gm. daily), and 2.5 gm. of magnesium oxide daily. After three weeks of intensive treatment drowsiness developed, the patient vomited small amounts, and experienced more epigastric pain. Because of these symptoms the serum calcium level was determined, revealing calcium levels of 15.6 and 16 mg. per 100 cc. Other blood chemistry determinations revealed abnormal blood urea, creatinine, calcium, phosphorus, and carbon dioxide levels. Further history obtained from the patient at that time disclosed that for several years he had taken large quantities of baking soda daily. He had a definite aversion to milk but had regularly eaten from ¼ to ½ lb. of cheese daily, containing an amount of calcium roughly equivalent to 1 pt. to 1 qt. of milk daily. Slit-lamp examination of the corneas showed band keratopathy typical of that described by Burnett and associates. The patient was placed on a diet containing less than 200 mg. of calcium daily, the milk and calcium carbonate were stopped, and supplementary sodium chloride and potassium chloride were given. The blood urea, creatinine, calcium, phosphorus, and carbon dioxide content were restored to normal levels within 10 days. Daily urinary calcium excretion ranged from 116 to 173 mg. Coincident with the chemical improvement, the patient became more alert, the abdominal pain subsided, and he stated that he felt better than he had felt in years. A benign pyloric ulcer was found on subtotal gastric resection. The postoperative course was uneventful. Blood chemical determinations were normal and phenolsulfonphthalein excretion was 35% in 15 minutes. The clinical features of this case were strikingly similar to the 12 cases previously reported. The history of prolonged intake of large amounts of alkali in the authors' patient is noteworthy, but the calcium intake can hardly be considered excessive. Although calcium carbonate is considered to be a nonabsorbable alkali, it appears quite possible that it contributed to the alkalosis that developed in the patient. Since some degree of vomiting was present and since alkalosis cleared rapidly with administration of sodium and potassium chloride, it is possible that acid loss and low chloride intake played as significant a role in the production of alkalosis, as did the administration of calcium carbonate. However, the hypercalcemia seems to have been definitely associated with high intake of milk and calcium carbonate, since, on discontinuing this therapy, the serum calcium level fell rapidly. High calcium intake from milk and alkali therapy does not, in most cases, produce hypercalcemia. Even when alkalosis is produced by therapy for peptic ulcers, it is seldom accompanied by hypercalcemia. Except in one case reported by other workers, all such patients in whom hypercalcemia developed also have had some degree of alkalosis. These facts suggest that the basic defect is the alkalosis. Why the occasional patient develops hypercalcemia remains to be determined. The exact mechanism by which renal damage is produced is also uncertain. The renal function as determined by concentration and phenolsulfonphthalein excretion returned to normal in the authors' patient as it did in two cases collected from the literature.

Genetic Causal Factors in Cancer of Stomach. A. Videbæk and J. Mosbech. Danish M. Bull. **1**:189-193 (Dec.) 1954 (In English) [Copenhagen, Denmark].

Study was made of the children, siblings, parents, and in some cases also the siblings of the parents, of 302 patients with verified cancer of the stomach, or an average of 11 relatives per patient. The control material consisted of 300 symptom-free persons, with an average of 12 relatives examined per control person. The frequency of gastric cancer was found to be on the average four times higher among the relatives of the patients with gastric cancer than among the controls, while the incidence of cancer in other sites was not significantly increased. Cancer localized to the proximal part of the stomach manifested itself somewhat earlier on the average than cancer situated in the antrum or the pyloric canal. Exogenic factors are believed to be able to accelerate the development of cancer of the stomach. That the incidence of cancer of the stomach is slightly higher in men than in women is perhaps because men are more exposed to such factors. The carcinogenic factors, however, are not demonstrable. While achylia is thought to be important, only about 60% of the patients with gastric cancer have achylia. Achylia is assumed to play a part in the formation of polypi in the stomach and polypi are regarded as a precancerous stage. The probable explanation of the familial occurrence of pernicious anemia and cancer of the stomach is that achylia may be hereditarily conditioned and predispose to both diseases.

Intestinal Lipogranulomatosis (Whipple's Disease). K. S. Jørgensen. Acta chir. scandinav. **108**:304-314 (No. 4) 1954 (In English) [Stockholm, Sweden].

The term "intestinal lipogranulomatosis" is suggested to describe Whipple's disease, which is a definite clinical entity. A woman, aged 43, with well-controlled, asymptomatic syphilis, who complained of progressive weight loss and fatigue for six months, was admitted to the department of surgery, County Hospital, Copenhagen, Denmark, with an abdominal mass and pain. Exploratory laparotomy revealed a conglomerate the size of a fist of enlarged mesenteric lymph nodes and slight congestion of the small intestine. Histological examination of a lymph node removed at operation provided the diagnosis. The patient was followed for more than three years. Treatment with penicillin, supplemented by desoxycorticosterone acetate injections, which were continued for 18 months, resulted in apparent recovery. During the first 12 months, the patient was given a diet low in fats, with ample quantities of proteins supplemented by fat-soluble vitamins. At the time of writing, she was able to attend to her usual activities and had no symptoms apart from a slightly elevated sedimentation rate, possibly due to a common cold. Both before and after operation it was believed that the patient was suffering from a malignant disease, until histological examination proved otherwise. Analysis of fecal fat did not show definite deviations from normal, but a study of the serum lipids revealed a slightly increased content of total lipid, which mainly consisted of neutral fat. Phospholipids were increased in amount, while the cholesterol content was low but still within normal limits. A similar analysis two years later showed a low lipid content with low phospholipid values; the cholesterol fraction was still normal. At both examinations, the amount of free cholesterol was significantly increased. It seems reasonable to assume that the patient had an infectious disease that subsided during treatment. The fall in the sedimentation rate and antistreptolysin titer and the considerably improved general condition of the patient lend further support to this assumption. In intestinal lipogranulomatosis, three factors seem to be important: infection, disordered lipid metabolism, and adrenal cortical insufficiency. As shown by the case of this patient, treatment directed toward these three factors gives good results.

Diabetes Mellitus in Twins: With a Report of Four Cases. J. Allan. Glasgow M. J. **36**:15-19 (Jan.) 1955 [Glasgow, Scotland].

Two sets of diabetic twins have been under the author's care for from two to seven years. In the first pair (male, uniovular), the disease developed in the older twin at the age of 28 years and in the younger three and a half years later. In the second pair (female, binovular), diabetes first appeared in the older sister at the age of 54 years and in the younger six months later. All four are maintained in good health with insulin. No history of diabetes could be found in the two families, but the disease could have been present in the grandparents. If, as many authorities believe, diabetes mellitus is transmitted by a recessive gene according to Mendelian law, then skipping of a generation is to

be expected. The evidence provided by the cases of diabetes in twins reported in the literature shows that heredity is at least one factor. Both members of a pair of uniovular twins are about five times more frequently affected than are both binovular twins. Almost without exception in uniovular twins, both are said to suffer from diabetes after the age of 43. When only one has the disease, his partner is likely to have an abnormal glucose-tolerance test curve. Both partners of the first-affected twins in this series refused testing.

Panhypopituitarism Is Easily Missed. M. Dodge, A. W. Robinson and A. V. Arms. J. Kansas M. Soc. **56**:74-77 (Feb.) 1955 [Topeka, Kan.].

Dodge and associates present the histories of three patients that illustrate various aspects of panhypopituitarism. The first patient, a man aged 40, was pale, his skin was dry, and the reflexes were typically myxedematous with a slow rise and fall, best demonstrated in the biceps tendon. The testes and prostate were atrophic. The optic disks showed bilateral pallor, and the body hair was diminished. X-ray examination of the skull indicated thinning of the floor of the pituitary fossa and enlargement of the fossa, together with an irregular area of calcification superimposed on the pituitary area. The patient was treated with thyroid, cortisone, and testosterone, and, because of a continuing delusion of a bad odor, x-ray treatment was given to the sella. There has been no change in the patient's olfactory delusion; however, his general health improved. The second patient was a woman, aged 47, who complained of fatigue, cold intolerance, dryness of the skin, and amenorrhea. The patient had stopped menstruating suddenly at age 40, without hot flashes and with no periods since. Between 1947 (age 40) and 1954 she had received various forms of symptomatic treatment, but no diagnosis had been made. In 1954 she presented the typical picture of panhypopituitarism, with a pale, puffy skin, decreased body hair, and considerable lethargy. Visual fields and neurological examination were normal. An x-ray of the skull revealed an enlarged sella. The patient was dismissed on a regimen of the usual end-organ treatment of estrogen, androgen, cortisone, and thyroid. In addition she was given corticotropin with the idea that perhaps the latter drug is more physiological in these cases than cortisone. She improved rapidly. The third patient was a man, aged 40, who on examination in 1952 revealed the typical facies of panhypopituitarism, with a pasty, dry, thin epidermis, a rather dull look, and myxedematous reflexes. Body hair was scanty throughout. The testes were somewhat small, and the prostate was definitely atrophic. There was optic atrophy, worse on the right than the left, and contracture of the visual fields. An exploratory craniotomy exposed a golf-ball-sized mass in the region normally occupied by the pituitary gland. After operation the patient was treated with cortisone, androgen, and thyroid. Hair growth, libido, and potency improved. Pallor is typical of panhypopituitarism, and, although thyroidal myxedema causes the same type of pallor, the physician should be alert for pituitary lesions, as myxedema may be but a part of panhypopituitarism. Other cardinal features of the latter syndrome are amenorrhea, impotence, loss of hair, headache, tunnel vision, and often refractory anemia. The genital organs may be atrophic. The common causes of panhypopituitarism are any tumor, including craniopharyngioma, or vascular destructive process that impinges in or on the pituitary. Infarction of the pituitary following postpartum shock is an important cause of panhypopituitarism in women. Failure of growth of pubic hair after having been shaved during delivery should arouse suspicion. Cortisone or corticotropin must be given before therapy with thyroid is started in the treatment of panhypopituitarism. If the reverse order is followed, results may be disastrous, because apparently thyroid medication in the presence of myxedema and decreased adrenal function produces stresses that may be fatal.

Case of Grave Acute Renal Insufficiency Treated with Hemodialysis (Artificial Kidney). G. Brun, C. Crone and N. Lassen. Ugeskr. læger **116**:1728-1730 (Dec. 9) 1954 (In Danish) [Copenhagen, Denmark].

The authors report a case of grave acute renal insufficiency developing after barbiturate intoxication with shock. In the course of six days the blood urea rose to 578 mg. per 100 cc. Treatment with hemodialysis according to Skeggs and Leonards was given, in all, three times in nine days. After three weeks the renal function was so far restored that the concentration of nitrogen retention products in the blood began to decrease spontaneously. The patient's recovery is attributed to the dialysis.

Problems Concerning Renal Biopsy and Dialysis Illustrated by Three Cases of Grave Acute Anuria: 1) Shock and "Saccharose Change", 2) Hemolysis, 3) Acute Bilateral Cortical Necrosis. P. Effersøe, H. Gormsen, P. Iversen and F. Raaschou. Ugeskr. læger **116**:1715-1728 (Dec. 9) 1954 (In Danish) [Copenhagen, Denmark].

A man, aged 33, developed oliguria and uremia after posttraumatic shock and died from edema of the brain. In addition to slight changes pointing to acute tubulointerstitial nephritis, renal biopsy disclosed diffuse "hydropic" changes presumably due to intravenous administration of saccharose. Saccharose given intravenously to patients with oligoanuria is cautioned against. Acute hemolytic anemia of unknown cause in a pregnant woman, aged 35, led to oliguria and uremia. Biopsy showed numerous hemoglobin-colored casts. Death from intracranial hemorrhage occurred at a time when the renal function was beginning to improve. The hemorrhage is ascribed to hemorrhagic diathesis because of the protracted uremia that had lasted 26 days. Reduction of the renal function to less than 5% for more than 10 to 14 days should be prevented by timely hemodialysis. In the third case, in a woman aged 26 with complete anuria also of unknown cause, the rare disorder acute bilateral cortical necrosis was found on renal biopsy. As the renal function was slow to improve the patient was treated with peritoneal dialysis, during which the renal function rose to about 15% of the normal, which corresponded to the finding of a few preserved glomeruli at biopsy, while most of the glomeruli were totally necrotic. The patient survived, and the renal function has since risen to about 29% of the normal. The diagnosis was confirmed by the establishment of calcinosis in the peripheral parts of the kidneys on later tomographic roentgen examination.

SURGERY

Pericardial and Myocardial Vascularization Following Cardiopericardiopexy: Magnesium Silicate Technique. A. Plachta, S. A. Thompson and F. D. Speer. A. M. A. Arch. Path. **59**:151-161 (Feb.) 1955 [Chicago].

Plachta and associates are concerned with the method suggested by one of their own group, S. A. Thompson, who uses intrapericardial application of U. S. P. talc powder (hydrous magnesium silicate) to establish collateral circulation in coronary heart disease. He removes a portion of the fifth cartilage on the left side, where it is unnecessary to enter the pleura. Then the pericardial sac is opened for approximately 1 to 2 in. (2.5 to 5 cm.), the heart is palpated for infarctions and adhesions, the pericardial fluid is aspirated, and from 4 to 6 gm. of dry, sterile magnesium silicate powder is distributed over the epicardium, after which the pericardial sac and the chest wall are closed. Over a period of 14 years (1938 to 1951) the authors performed this operation on 57 patients, 7 of whom died within three weeks of surgery. Of the 50 surviving patients, 5 were only slightly improved, 25 were improved more than 50%, and 20 patients were improved more than 75%. Thirty-three are still living, and the 17 who have died lived an average of five years after cardiopexy. In 10 of the 17 patients autopsy was done, and this report is concerned chiefly with the studies on the hearts of these patients, which disclosed the talc-produced granulomatous pericarditis and its vascularization. There was no evidence that the granulomatous pericarditis becomes a static, avascular, healed scar. The hydrous magnesium silicate serves as a trigger device, irritating the pericardial membranes. This function of the talc crystals is evidently a ceaseless activity. The lesion is characterized by hyperemia, and, presumably, by accelerated flow of blood through newly formed and preexisting dilated vascular channels. It was found to persist for at least 10 years after operation, and presumably it will persist as long as the patient lives. The clinical features of constrictive pericarditis, such as prominent

neck veins, hepatomegaly, ascites, hypotension, and an increase in venous pressure, however, were not seen in any of the patients. To Black's suggestion that the epicardium forms a barrier to the ingrowth of blood vessels, the authors reply that talc-induced pericarditis gradually eliminates the barrier, as evidenced by the absence of mesothelium and of the supportive thin layer of connective and elastic tissue fibers of both parietal and visceral pericardial layers. The fibroblastic proliferation, with subsequent fusion of these membranes, results in a progressive, chronic, adhesive, vascularized, granulomatous pericarditis. The usefulness of the rami telae adiposeae in providing anastomoses between the coronary arteries and the vessels of the surrounding structures cannot be overestimated. The authors studied the hearts by means of histochemical endothelial staining, visual dissection, and roentgenographic and microscopic evaluation, and these studies showed the course and origin of the collateral vessels to correspond to those reported by previous investigators. In accord with observations by Gross, Hudson, and Lezius, they found the coronary system anastomosing through the vascularized granulomatous pericarditis with vessels in the mediastinum, parietal pericardium, diaphragm, and hiluses of the lung, vasa vasorum of the ascending aorta, and pericardial branches of the internal mammary arteries. They believe that the extracardiac anastomoses constitute a most significant reserve for cardiac circulation, augmented by the presence of vascularized pericardial adhesions.

Rupture of the Aortic Valve: A Therapeutic Approach. J. J. Leonard, W. P. Harvey and C. A. Hufnagel. New England J. Med. 252:208-212 (Feb. 10) 1955 [Boston].

A case of traumatic rupture of the aortic valve in a 17-year-old boy is described. Six weeks before the patient's admission to the hospital with the chief complaint of "heart trouble" he had assisted at the breeding of horses, was kicked in the chest by a stallion, became unconscious, and was hospitalized. On regaining consciousness, the patient immediately became aware of a roaring sensation in his chest; he described the sound coming from the anterior part of his chest as similar to that "of a water pump leaking water around the valves." He confirmed his impression by palpating the thrill over his precordium. Auscultation revealed a grade 5 high-pitched musical diastolic murmur heard best along the left sternal border at the third interspace. A grade 2 systolic murmur was present in the same area. At the apex a grade 3 systolic murmur, a prominent Flint murmur, and diastolic ventricular gallop were heard. Other signs of aortic insufficiency were a Quincke pulse and a Corrigan pulse. An electrocardiogram showed sinus tachycardia and incomplete right-bundle-branch block. Roentgenograms showed cardiomegaly with enlargement of the left ventricle of moderate degree. Cardiac catheterization revealed a significant increase in the oxygen content of the blood in the right ventricle over that in the right atrium. It was believed that the patient had sustained a traumatic rupture of a normal aortic valve, as evidenced by the classic cardiac findings and peripheral signs. In addition it seemed likely that a tear had involved the interventricular septum as indicated by the increased oxygen content of the blood in the right ventricle over that in the right atrium. The patient was digitalized, placed on a low salt diet, and given mercurial diuretics on two occasions. Three weeks later he was operated on because of the poor prognosis in sudden free aortic insufficiency, both traumatic and nontraumatic, and an artificial aortic valve was inserted into the descending aorta. Postoperative cardiac catheterization confirmed the preoperative findings by demonstrating an increase of 2.5 vol. % in the oxygen content of the blood between the right atrium and the right ventricle, further supporting the preoperative diagnosis of a tear in the interventricular septum in addition to the valvular lesion. The patient improved progressively. Fourteen months after the operation he was symptom-free and working full time as a truck driver. This fact alone indicates a new era in the field of aortic-valve rupture. The diagnosis of these cases becomes more than an academic exercise, because aortic-valve rupture may now be classified as a reversible or partially curable form of heart disease that eventually may become completely curable.

Surgical Treatment of Cardiac Aneurysm. F. F. Niedner. Deutsche med. Wchnschr. 80:177-179 (Feb. 4) 1955 (In German) [Stuttgart, Germany].

A new method for surgical treatment of cardiac aneurysm is described that was used successfully in three patients treated at the surgical clinics of the City Hospitals of Ulm-on-the-Danube, Germany. Of the three patients, two, a 57-year-old man and a 63-year-old woman, had an aneurysm of the left ventricle, and the third patient, a 49-year-old man, had an aneurysm of the right auricle. The principle of the new surgical procedure consists of strengthening of the aneurysmal wall and of preventing in this way the rupture of the heart. Nature itself points out the way for the strengthening of the aneurysmal wall, which is manifested by the thickening of the epicardium and by adhesions with the likewise thickened pericardium. In the patients with aneurysms of the ventricular walls, the adhesions with the pericardium were not loosened, but separation of the pericardium was carried out in the healthy tissue. A large flap was obtained from the skin of the patient's leg; it was placed upon the aneurysm and sutured around the pericardium, which at the same time was lifted up. Thus the aneurysm was compressed and was made considerably smaller. By the separation of the pericardium around the aneurysm the spasticity of the coronary vessels was diminished considerably and the risk of repeated cardiac infarctions was reduced. In the patient with aneurysm of the right auricle, simultaneous resection of the aneurysm and of the auricular appendage was performed after a purse string suture had been passed in the healthy tissue. Then the suture was drawn together, the incision edges were closed by single sutures, and the flap obtained from the skin of the patient's leg was used for closure of the right auricle by mattress sutures. The flap was united by suture with the lifted-up pericardium. Early results were highly satisfactory in all three patients.

Results of Surgical Treatment of Carcinoma of the Lung. T. H. Sellors. Brit. M. J. 1:445-448 (Feb. 19) 1955 [London, England].

An analysis of the author's patients with cancer of the lung operated on between 1940 and 1950 is made. Of a total of 689 thoracotomies, 446 were found suitable for excision, an operability rate of about two-thirds of the patients explored. A follow-up to the end of 1953 gave for patients operated on prior to 1948 a survival rate of 34% at the end of two years, 30% at three years, 23.5% at four years, and 21% at five years. In the 1949-1950 series 40% were alive at the end of two years and 34% at three years. It is thought that there is some satisfaction that at least 20% of these patients survived the five year period. Moreover, the more recent cases suggest that this figure can be improved upon.

Bronchogenic Carcinoma: Diagnosis, Operability, and Prognosis. F. Therkelsen and H. R. Sörensen. Nord. med. 53:89-97 (Jan. 20) 1955 (In Norwegian) [Stockholm, Sweden].

The material comprises 555 cases of pulmonary cancer from the thoracosurgical department and ambulatorium of the Riks-hospital from 1942 to 1953. The initial symptom of the disease is most often an acute infection; in other cases the onset is frequently marked by several symptoms at one time. The difference in general clinical conditions and symptoms in operable and inoperable cases is not great. The study shows an increase in operability from 26.7% in 1942-1949 to 38.9% in 1950-1953, a decrease in operation mortality, and a five year survival of 40%. The increased operability is ascribed largely to earlier diagnosis because of the increased interest and contribution of the practicing physicians and tuberculosis stations. The high percentage of survival may depend on the fact that relatively many flat epithelial cell tumors were operated on and that there were relatively few lymph node metastases. Some of the factors that affect the prognosis cannot be changed by earlier diagnosis or better treatment. A histological type such as the anaplastic carcinoma has an extremely unfavorable prognosis. Advanced age is a prognostically unfavorable factor. There is, however, no reasonable chance for recovery for patients over

60 years of age that surgical intervention is indicated. An active attitude with regard to treatment seems to be highly justifiable. Even though removal of the lung by extrapleural resection or resection of pericardium is necessary, survival after five years is possible. When in planocellular carcinoma a five year survival can be attained in about 70% of the patients and a good, though lower, percentage of survival for older patients, there is every reason to increase the efforts for early diagnosis. Follow-up of 22 surviving patients from nearly four years to nine years after resection for cancer of the lung done prior to 1950 showed that all the patients with occupations involving lighter manual labor and some of those doing heavier manual labor were able to resume their work.

Special Significance of Concomitant Gastric and Duodenal Ulcers. H. D. Johnson. Lancet 1:266-270 (Feb. 5) 1955 [London, England].

Although duodenal and gastric ulcers cause similar symptoms and are histologically similar, there are great differences in the patients in whom these lesions develop. There are not only differences in age, sex, and racial distribution, but also the patterns of gastric secretion and muscle tone lie at opposite ends of the scale in the two types of patients. Whereas duodenal ulcer develops on a basis of hyperacidity, hypertonicity, and rapidity of gastric evacuation, gastric ulcers are associated with a rate of acid secretion below that of normal subjects and with stomachs that are sagging, sluggish, and slow in emptying. In view of these differences it is surprising that ulcers should sometimes arise in the stomach and duodenum of the same patient. Although reports vary greatly with regard to the incidence of concomitance, Johnson believes that it is probably about 5%, if symptomless ulcers are included. Of ulcer patients who come to the hospital, about 7% have both duodenal and gastric lesions. Surgeons, however, commonly see a greater proportion of such patients, and Johnson found 29 (or 9%) in 311 patients on whom he performed operations for peptic ulcer. In addition to these 29 patients, he analyzes a further 90 cases made available to him by colleagues. He deduces from this analysis that the duodenal ulcer is the first to appear. The patients have a secretion pattern that lies between that of the patients with duodenal ulcer and that of patients with established pyloric stenosis. It does not resemble the secretion pattern of patients with gastric ulcer. A substantial majority of patients with concomitant ulcers have gastric retention and many have gross pyloric stenosis. About 16% of patients hospitalized with pyloric stenosis have gastric ulcers as well. At operation the gastric ulcer is usually found to be active, while the duodenal ulcer is healed and scarred. Twelve additional cases are described that illustrate how gastric retention from causes other than duodenal ulcer may also be complicated by the development of gastric ulcers. In a series of 39 patients with hiatal hernias the author observed 4 with gastric, 4 with duodenal, and one with both gastric ulcer and a healed, scarred duodenal ulcer, and he feels that this association can be linked with what has emerged concerning concomitant ulcers. He suggests that reflux esophagitis may sometimes cause hiatus hernia, instead of vice versa, and reflux may in turn be caused by duodenal ulcer and gastric retention. Gastric retention may also apparently cause gastric ulcer, and the association of these lesions may thus be explained. Patients with concomitant ulcers are particularly prone to have hemorrhages, and, when they do, it is usually the gastric ulcer that bleeds. Two facts should be borne in mind in the treatment of combined gastric and duodenal ulcers. First, an element of gastric retention is almost certainly present, and so special preoperative measures are required, such as gastric decompression and lavage, also attention to likely depletion of water, electrolyte, and protein reserves. Second, the patient is of the duodenal ulcer type and may have hypersecretion, although this may not be evident in the presence of pyloric obstruction. An operation adequate to control hypersecretion must be performed. The author believes that concomitant gastric and duodenal ulcers are too dangerous to warrant nonoperative management and that surgery should be resorted to early, before the risks become excessive.

Dietary Control of the Postgastrectomy "Dumping Syndrome." M. A. Hayes. J. Am. Dietet. A. 31:133-137 (Feb.) 1955 [Chicago].

Following gastric resection, approximately 11% of patients experience distress after eating. In some patients, the symptoms occur during or soon after eating; in others, an hour or two after eating. The early discomfort is more common than the later, but both may occur in the same patient. The type of reconstitution of the gastroenteric continuity seems to be unrelated to the frequency of the syndrome, but the segment of the stomach removed seems to play a part. It has been conclusively demonstrated that when the pyloric antrum and proximal duodenum are removed, delay in gastric emptying by the presence of fat is no longer observed. This is not true when a simple gastroenterostomy is done. The failure of patients in whom partial gastrectomy has been done to gain weight is also an important clinical factor, and some patients who have difficulty in maintaining their weight have complications such as the "dumping syndrome" or recurrence. This report is concerned with the management of both the dumping syndrome and the suboptimal weight complex by supervision of total caloric intake and the source of these calories from protein, carbohydrate, and fat. Studies were made on seven patients, all men, who exhibited varying degrees of the postgastrectomy nutritional deficit syndrome. One patient on whom data are presented in detail had more symptoms than any other, and his weight curve showed the greatest degree of malnutrition. The other six patients were managed on the same dietary regimen with complete subsidence of symptoms and restoration to or toward preoperative weight levels. Two of the seven patients who had displayed both the early (dumping) and the late (hypoglycemic) symptoms were equally well controlled. The high protein and low carbohydrate content of the diet appears to be as adequate in the control of this induced hypoglycemia as it is in the management of functional hyperinsulinism. A diet of high fat, high protein content (slowly hydrolyzed) should be fed to the maximum exclusion of carbohydrate (easily hydrolyzed). A satisfactory diet is one with the caloric ratios from carbohydrate, protein, and fat, respectively, 1:1.5:5. In view of the high incidence of nutritional problems after gastrectomy, it might be advisable to recommend such a diet to patients in whom gastrectomy has been done as a preventive measure.

Gastric Carcinoma: A Statistical Review of 427 Cases of Carcinoma of the Stomach from 1941 Through 1950. J. R. Moore and H. S. Morton. Ann. Surg. 141:185-192 (Feb.) 1955 [Philadelphia].

Moore and Morton review 427 patients with gastric carcinoma who were admitted to the Royal Victoria Hospital in Montreal in the 10-year period from 1941 through 1950. The follow-up by the Central Tumor Registry of this hospital was 100% complete. All patients except one had symptoms of gastrointestinal disease. The most common symptoms were loss of weight, abdominal pain or discomfort, and vomiting. Constipation was the chief complaint of 63 patients. A palpable mass was present in 120 (28%) patients. It did not always indicate an inoperable growth. Free perforation occurred in seven patients, and all had disease in an advanced stage. There were no immediate deaths. In one-half of the patients the duration of symptoms was more than six months, and in one-quarter it was more than one year. Surgical treatment, in the form of subtotal or total gastrectomy, was carried out as soon as the diagnosis had been established. In more than 25% of the patients treatment had begun within three months of the onset of symptoms. This was considered to be important with regard to the survival rate, but, when the results were analyzed, the longest survival occurred in those patients who had symptoms for over one year. While it is recognized that carcinoma may be present in the stomach for a long time before symptoms are caused, it would seem that there are two clinical types of cancer of the stomach; one, a rapid, severe and usually fatal disease, and the other, a chronic, slow-growing type that is more amenable to treatment. Roentgenoscopy after a barium meal is the most valuable diagnostic procedure, which revealed the lesion in 92% of the cases. Three hundred forty-nine or 81.7% of the patients were operated on. Subtotal gastrectomy was done in

147 patients, in 81 of them for cure and in 66 for palliation. In the second five-year period, there has been an increase of 10% in the palliative resections. Total gastrectomy was performed in 16 patients, of whom 6 died at operation and only one survived for three years. Of 298 patients 11.7% survived for five years. Of the group subjected to subtotal resection for cure 37.5% survived five years, and of those subjected to palliative subtotal resections 19.5% survived for five years. The over-all five-year survival from subtotal gastrectomy was 30.5%. The lymph nodes showed metastases in 34.3% of the resections for cure and 65.8% of the palliative resections. Considered solely on the basis of lymph node pathology, 10.6% of those patients with involvement of the nodes lived five years, while 36.7% of those without involvement of the nodes survived this length of time.

Critical Comment on Problem of Total Gastrectomy. W. Wachsmuth. Deutsches med. J. 6:2-5 (Jan. 15) 1955 (In German) [Berlin, Germany].

Although recovery of a patient with a malignant tumor depends on radical eradication of the tumor, and consequently on radical surgical intervention, the almost unlimited technical possibilities obviously act on the surgeon as an inducement to overestimate the technical-mechanical point of view. As a result of a review of the literature on total gastrectomy and his own experience with this surgical method, the author emphasizes four points. 1. Total gastrectomy does not warrant freedom from recurrence and particularly does not prevent the occurrence of metastases more definitely than partial or subtotal resection. After the carcinoma once has broken through its regional barriers, it seems to be a surgical error to "follow" the tumor into its most distant "recesses" with more and more radical operations in an attempt at its eradication by knife. 2. The operative risk of total gastrectomy is greater than that of a more limited resection, particularly because of a certain unreliability of the esophagointestinal anastomosis, since the esophagus has no serous membrane and adhesions do not occur rapidly as they do with suturing of stomach and intestines. 3. The question of life expectancy cannot yet be definitely answered, but even American statistics show that only 6.7% of those subjected to total gastrectomy survived for five years, as compared to 30% of those who underwent partial resections. 4. There is an almost general consensus that total gastrectomy places a heavy burden on the entire organism. Decrease in function leads to the agastric syndrome with disturbances of total metabolism, particularly of fat and iron metabolism; digestive insufficiencies are associated with losses in weight. Critical considerations, therefore, do not permit recommendation of total gastrectomy as the method of choice in the treatment of carcinoma of the stomach. This procedure should be limited to cases in which the extent of the tumor requires categorically the total eradication of the stomach. The decisive functional value of leaving even small parts of the stomach is stressed.

The Surgical Treatment of Portal Hypertension. C.-A. Ekman and P. Sandblom. Acta chir. scandinav. 108:241-260 (No. 4) 1954 (In English) [Stockholm, Sweden].

On the basis of 43 cases of portal hypertension (19 due to extrahepatic block and 24 to intrahepatic block) in which operation was done, an account is presented of the symptoms, diagnosis, indications for operation, operative technique, and results of surgical treatment. Portal venography proved valuable preoperatively in the diagnosis of portal hypertension and for judging the suitability of the portal and splenic veins for the establishment of a shunt and postoperatively for studying the function of the anastomosis. Portal-systemic shunts were performed in 36 cases of portal hypertension. The operative mortality was none in the group with extrahepatic block and 15% in those with intrahepatic block (3 of 6 poor-risk patients died, but none of 15 good-risk patients). In 15 of the 36 patients the block was extrahepatic. There was no operative mortality, but hemorrhage recurred in eight patients, six of whom died. Four of the six patients were "postsplenectomy bleeders" in whom only minor, unsatisfactory shunts could be performed. Splenorenal anastomosis with Blalock's suture technique was established in nine patients, with good result in seven who were cured and remained without further hemorrhage during a follow-up period of 1½ to 6 years. In the 21 patients with intrahepatic block, splenorenal shunt was established in 7 without operative mortality and direct portacaval shunt in 14, of whom 3 died postoperatively. In only one patient of this group did hemorrhage recur. Twelve are living symptom-free, and five died during a follow-up of two months to five years. Only two of these deaths were due to liver failure; the others were caused by irrelevant diseases. Observations made in the present investigation suggest the following conclusions: 1. The establishment of a shunt between the portal and the systemic circulations is as yet the only rational treatment of portal hypertension. 2. In the treatment of extrahepatic block, the use of splenectomy alone is contraindicated, because it excludes the possibility of later anastomosis. 3. In the treatment of cirrhosis, the only purpose of a shunt is to suppress the elevated portal pressure. 4. In the treatment of cirrhoses anastomoses should be performed only in carefully selected cases.

Appendicitis—A Report of Two Seven-Year Surveys. B. Plewes and L. Teskey Jr. Canad. M. A. J. 72:175-178 (Feb. 1) 1955 [Toronto, Canada].

The mortality from appendicitis has been reduced to 2 deaths per 1,000 cases from 26 per 1,000 fifteen years ago. This is shown by a survey of all appendectomies at the Toronto East General Hospital during the years 1946-1952 inclusive as compared with a similar study of the 1933-1939 period. Ruptured appendicitis has become 15 times less fatal. Chemotherapeutic and antibiotic agents are probably the most important of the many factors suggested as having effected this improvement. In the postwar period there was a 10% increase in appendectomies for clinically acute but pathologically unconfirmed cases. During the same period there was a 10% decrease in the incidence of ruptured appendicitis. Ten deaths occurred in the more than 5,000 cases in the postwar period, but only three of these were directly due to appendicitis or its sequels. The authors feel that the mortality of appendicitis may be further reduced if the present trend toward earlier operation is continued, with greater attention to the differential diagnosis. The treatment of acute appendicitis is immediate appendectomy.

Comprehensive Surgical Management of Cavernous Hemangiomas of the Lower Extremity with Special Reference to Stripping. T. T. Myers and J. M. Janes. Surgery 37:184-197 (Feb.) 1955 [St. Louis].

This report is restricted to congenital cavernous hemangiomas of the lower extremities. It is concerned with 19 patients in whom 20 extremities were involved. The history usually states that a port-wine stain or dilated veins or both were first noted at birth or shortly afterward. In some patients the veins become large and tortuous early in life; the youngest surgical patient in this series was 18 months old. Usually, however, the patient is 8 or 9 years old before the condition becomes serious. Congestive pain in the lower part of the leg or about the knee is the most troublesome symptom. Several of the younger patients would raise the involved extremity and place the foot on the opposite knee, resting it there when standing, to help relieve the pain. Seventeen patients gave a history of edema, two of stasis ulcer, and three of chronic induration. The diagnosis of cavernous hemangioma is obvious on inspection. The lower extremity is enlarged and is covered with large tortuous veins. As a general rule, an extensive port-wine stain is present. There were five extremities in which the length of the bone was increased. In all but 3 of the 20 extremities there was increase in the circumference of the thigh and leg. The venous pattern must be ascertained for an intelligent surgical approach. The lumbar-to-foot pattern was the most frequent (11 of 20 cases). The second long saphenous pattern occurred in 7 of the 20 extremities. The third pattern is the gluteal-short saphenous pattern, which originates with extremely ballooned-out veins in the gluteal region. The fourth pattern is simply that of an incompetent short saphenous vein with perforators on the lateral side of the foot. These last two patterns were observed in one case

each. Treatment consisted in removal of the involved veins by stripping and direct dissection along with ligation of the perforating veins. The operation is begun by making an incision at the base of the toes. The distal veins are tied and the large proximal veins going over the foot are followed upward. All abnormal veins in the feet are tied, and all marked perforator sites in the foot are exposed and the perforators ligated behind the fascia. In the case of the lumbar-to-foot pattern, the flexible intraluminal strippers of variable sizes and lengths can be passed upward through the main channels. While pulling the strippers, the surgeon should watch for unusual bleeding because that means a tributary is remaining open or a perforator has been torn. The authors usually tie the veins to the stripper with silk fish line and pull the silk thread behind the stripper so as to have the channel marked; this permits checking for bleeding and putting in temporary packing until the bleeding point can be located. The 19 patients are in satisfactory condition, except two whose condition was inoperable and one who underwent stripping only to the midleg region. The authors believe that the surgical treatment outlined here, followed by frequent follow-up examinations and sclerosing therapy, may have much to offer patients with cavernous hemangioma of the lower extremity. The follow-up period has not been long enough and the number of cases has not been large enough to permit adequate appraisal of this plan of treatment.

The Adrenocortical Response to Extensive Burns in Man. H. Wilson, J. R. Lovelace and J. D. Hardy. Ann. Surg. 141:175-184 (Feb.) 1955 [Philadelphia].

Injury is usually accompanied by an increase in adrenal cortical activity. The present investigation is concerned with the magnitude and the duration of this increased activity following extensive thermal burns in 12 human subjects. The patients selected for study were those admitted to the hospital within a few hours after a burn injury that exceeded 15% of the body surface area. Fluid and salt therapy was generally based upon a program that approximated that suggested by Evans, and a careful intake-output record was maintained. The urinary excretion of corticoids and total neutral 17-ketosteroids and total eosinophil counts were measured from the date of admission to the date of discharge or death. The excretion of corticoids was sharply elevated following a significant burn, and this excretion remained at either an elevated or a normal level throughout the course of the burn regardless of whether the patient eventually died or recovered. The excretion of 17-ketosteroids was frequently elevated initially but declined in the severe chronic burn, in contrast to the excretion of corticoids. A prolonged severe depression of the total eosinophil count following the initial injury indicates a poor prognosis. In the experience of these authors, an eosinophil count of greater than 50 cells per cubic millimeter in the early stage of the burn is usually associated with a favorable outcome unless intractable septicemia intervenes. The authors conclude that the stress response in a severe burn is one of the most intense of which the body is capable.

Experimental Frostbite: An Inquiry Into the Effect of Rapid Thawing in the Acute Stage. J. A. Arena Jr. and A. Blain III. Surgery 37:175-183 (Feb.) 1955 [St. Louis].

The modern medical literature contains reports of experiments that purport to show that anticoagulants, sympathetic block, vasodilators, and rapid thawing are of benefit in the treatment of the acute stage of frostbite. The reports are sufficiently conflicting to cause confusion. Recent experimental observations on rapid thawing in the acute stages of frostbite are not in accord with early clinical observations. Baron Larrey, who was Napoleon's surgeon during the Russian campaign, found that rapid thawing increased the damage wrought by frostbite in his soldiers. Arena and Blain report studies that they feel support the clinical observations of Baron Larrey rather than many modern observations from the experimental laboratory. Of 30 rabbits weighing approximately 2 to 2.5 kg., 15 served as controls, in that after severe frostbite was produced the frozen extremity was allowed to thaw at room temperature. The remaining 15 were treated by rapid thawing at body temperature. The right hind leg of each of the 30 rabbits was first prepared by removing most of the hair with an electric clipper. Remaining hair was removed by application of a barium sulfide depilator. After the animals had been anesthetized, the extremity was immersed for 30 minutes in a mixture of acetone and solid carbon dioxide which was maintained at −10±2 C (approximately 14 F). At the end of the exposure the control was returned to his cage and the anesthetic repeated in the animals to be treated. With the anesthetic dose utilized for freezing, the maximum effect of the intravenously given anesthetic was slightly greater than 30 minutes. If the anesthetic were not repeated after freezing (before rapid thawing), the treated animal experienced pronounced pain when the affected area was exposed to the thawing medium. Immediately after exposure to the cold, the frozen extremity of the animal to be treated was immersed for 30 minutes in a constant water bath maintained at body temperature. In the 15 rabbits with acute, severe frostbite, rapid, thorough thawing at body temperature did not reduce tissue loss as compared to the amount of tissue lost in 15 untreated control rabbits. Rapid, thorough thawing appeared to increase the severity of tissue damage, edema, pain, and gangrene. It would appear that the present confusion regarding the efficacy of rapid thawing in the treatment of frostbite is partly du. to study of experimental lesions that are not comparable.

NEUROLOGY & PSYCHIATRY

The Wallenberg Syndrome: A Report of Two Cases. G. N. Lewis and J. R. Gill. J. Indiana M. A. 48:149-151 (Feb.) 1955 [Indianapolis].

Two cases of thrombosis of the posterior inferior cerebellar artery (Wallenberg syndrome) are described in men aged 53 and 51 years respectively. Although the symptoms and signs in these two patients were generally the same, the severity and the clinical courses differed. The older patient had a sudden onset with violent dizziness and nausea. His blood pressure was 150/100 mm. Hg, pulse 80, and temperature 98.6 F (37 C). There was ptosis of the right eyelid, a decreased corneal reflex on the right, and nystagmus on left lateral gaze. The right arm and leg were ataxic. Pain and temperature perception were absent on the left side of the body. There was right palatal weakness and a right peripheral facial paralysis. The patient complained of severe vertigo and headache. The vertigo subsided after four days and the headache after 12 days. The patient was discharged 13 days after his admission, with only the sensory dissociation and Horner's syndrome as residuals. Two weeks later he returned to work. The other patient had prodromal symptoms one month before the onset of the syndrome. Despite headache on the right side, numbness of the right side of the face, drooping of the right eyelid, and dysphagia, he was able to walk into the hospital, undress himself, and go to bed. Three hours later he became acutely ill, with protracted vomiting and severe vertigo. Ataxia developed in the right extremities. Twelve hours after the onset of the initial symptoms double vision and singultus developed and the patient's dysphagia became aggravated. On repeat examination 15 days after admission a Horner's syndrome was found on the right. Vertigo, ataxia, and headache lasted for several months. He was discharged three and one-half weeks after his admission, and only at the end of 10 months was he able to return to light work. In the presence of the symptoms and signs observed in the authors' patients, with a Horner's syndrome, the diagnosis of posterior inferior cerebellar artery syndrome should be considered. The prognosis of this syndrome is generally good.

Neurologic Complications of Contagious Infections of Children. A. Ariztia, M. Latorre and F. Martínez. Rev. chil. pediat. 25:407-416 (Sept.) 1954 (In Spanish) [Santiago, Chile].

One thousand two hundred thirty-eight children with contagious infections were observed in the pediatric department for contagious diseases of the Luis Calvo Mackenna Hospital of Santiago city during the last 10 years. There were 107 cases of measles, 61 of chickenpox, one of mumps, 481 of whooping cough, and 225 of typhoid. Neurological complications ap-

peared in 4 cases of measles, 4 of chickenpox, one of mumps, 25 of whooping cough, and 3 of typhoid fever. Encephalitis appeared in the first week of measles and in the second week of chickenpox. The predominant symptoms were those of a meningeal reaction, with fever, convulsions, and unconsciousness. Athetosis, strabismus, negativism, mutism, and sudden hemiplegia were rare symptoms. The main changes of the cerebrospinal fluid were hyperalbuminosis, pleocytosis and lymphocytosis. Two patients with neurological complications of measles and two with neurological complications of chickenpox died during the first or second week of the disease. The other two patients in each group recovered without sequels. The neurological complication of mumps was benign meningitis that appeared one day before mumps. There was albuminocytological dissociation of the cerebrospinal fluid. The disease followed a favorable course, with recovery of the patient without sequels. Patients with neurological complications of whooping cough were 19 infants and 7 children between the ages of 2 and 8 years. The neurological complications appeared at any time during the first four weeks of the disease. The predominant symptoms were unconsciousness and convulsions with signs of motor or extrapyramidal involvement. Nine patients recovered without sequels and seven recovered with sequels of the type of those following infantile cerebral paralysis. Nine patients died within about four days of the onset of the neurological sequels. The neurological complications of typhoid included acute purulent meningitis in one case; the patient died. In the other two cases symptoms of pyramidal involvement were observed. The patients recovered without sequels. Schizophrenia was observed in two cases in the course of convalescence of the disease. It lasted for three and four weeks, respectively, and disappeared without sequels. In all cases the treatment was symptomatic. The authors say that the symptoms, the time that passes between starting of the disease and appearance of the neurological complication, and the lesions of the nervous system are very similar in all the afore-mentioned contagious infections. The lesion of the nervous system consists of perivascular demyelinization that is due either to an allergic reaction or to tissue intoxication of the nervous system by bacterial toxins or viruses. The availability of gamma globulin and antibiotics is promising for the prognosis of the neurological complications that can be prevented or controlled.

Intramuscular Trypsin in Acute Poliomyelitis. G. J. Boines. Delaware M. J. 27:38-40 (Feb.) 1955 [Farnhurst, Del.].

Boines shows that the histopathological changes in poliomyelitis suggest that the clinical use of trypsin might be helpful. He used a crystalline trypsin in sesame oil, which is known as Parenzyme. One cubic centimeter of this preparation contains 5 mg. of trypsin for intramuscular use. A dosage schedule of 0.5 cc., or 2.5 mg., of trypsin every eight hours for 5 successive days, given deep in the buttocks, and then two doses daily for an additional 7 to 10 days, was empirically decided upon. It was used in 51 patients in whom the clinical diagnosis of acute poliomyelitis had been established. The ages of the patients ranged from 2 to 32 years; 35 were males and 16 were females. Twelve of the males and six of the females had bulbar spinal poliomyelitis. Improvement was usually evident after the second or third injection of the trypsin preparation. The acute toxic manifestations were rapidly modified. The progression of the paralytic processes was apparently arrested after 48 hours of therapy. Return of muscle strength was much greater than in the 700 acute cases observed since 1940 at the author's clinic. There was no muscle relaxation as far as stiffness is concerned; however, it was observed that the response to curare was accelerated in the patients treated with trypsin. They were able to take active exercise earlier and with greater resistance, thus permitting quicker rehabilitation. In the patients who had to be subjected to tracheotomy it was noted that after the injection of trypsin the tracheobronchial exudate changed from a thick, viscid, tenacious exudate to a "fluid state," permitting easier aspiration. In view of the gratifying results obtained, the author hopes that this preliminary report will stimulate other investigators to use trypsin as an adjunct in the clinical management of acute poliomyelitis.

Clinical, Pathogenetic, and Therapeutic Remarks on Anorexia Nervosa: The Notion of "Abiorexia." H. P. Klotz and P. Lumbroso. Semaine hôp. Paris. 31:440-445 (Feb. 2) 1955 (In French) [Paris, France].

Loss of appetite for food in anorexia nervosa is only one of the manifestations of that disease. The authors propose the term "abiorexia" to express the idea of loss of desire for many activities that occurs in women with this condition. These young patients are usually highly introverted, refusing to become involved in any competitive situation, avoiding members of the opposite sex, and generally shutting themselves off from society. The disease is apt to have its onset during the trying adolescent period or in early adulthood after some shock in the patient's psychic life. Amenorrhea was the initial symptom in 9 of the authors' 13 patients and often persisted after nutritive therapy had restored the patients' weights to normal. The cachexia occasioned by the anorexia may bring about metabolic disorders. Mild hyperazotemia is observed fairly frequently; it occurred in three of the authors' patients. There were few reports of avitaminosis as a complication in the literature; the authors add a case of avitaminosis of the B complex, the first to be reported. Stomatitis appeared in a 23-year-old woman with anorexia nervosa when she was given nutritive therapy; the disturbance was easily corrected with vitamin B complex therapy. Another case with a complication worth noting was that of a 29-year-old patient who had hypokalemia due to incoercible vomiting. The proper therapy for anorexia nervosa, or abiorexia, is isolation of the patient, forced feeding, and a psychotherapy that aims to impose on her a will stronger than her own. This treatment is generally successful, but in some cases it is not sufficient to enable the patient to maintain the improvement gained in hospital when she comes once more in contact with the problems of the real world. It is in these patients that amenorrhea is persistent, and relapses into the emaciated state are more than likely to occur in them, necessitating rehospitalization. Definitive cure of these patients can be achieved through prolonged psychotherapy that restores the disordered corticosubcortical balance.

Therapeutic Results with Chlorpromazine (Largactil) in Psychiatric Conditions. H. E. Lehmann. Canad. M. A. J. 72:91-99 (Jan. 15) 1955 [Toronto, Canada].

The author started using chlorpromazine in psychiatric patients at the Verdun Protestant Hospital, Verdun, Quebec, in May, 1953, and his series now numbers 283. As a therapeutic agent this drug is unique, because it produces sedation without significant clouding of consciousness or disinhibition of affect. It produces comparatively little depression of cortical function and acts more selectively than other inhibitory agents on the mesencephalic-diencephalic system. It can shorten the duration of acute psychotic episodes and also prevent psychotic breakdowns if given in the prodromal stage. In that respect, its action is equalled only by electroconvulsive therapy. The time required for full recovery is sometimes shorter than with electroshock and the patient's insight is often better because amnesia and confusion do not develop under treatment. There is also evidence that patients treated with chlorpromazine require fewer sessions of electroconvulsive therapy and therefore have less amnesia. The drug is of great clinical value for the symptomatic control of virtually any state of psychomotor excitement. It is equally effective in manic states, catatonic excitement, depressive agitation, toxic delirium, epileptic clouded states, or hysterical excitement. It is particularly useful in agitated conditions associated with organic cerebral disturbances. Complete remissions were obtained within 40 days in 48% of patients in the manic phase of manic-depressive psychosis. Of 98 patients with schizophrenia, complete remissions were obtained within 40 days of treatment in 28% of those patients whose symptoms had been present for one month or less. If the much improved patients be added to this number, it can be said that 39% of the author's 54 patients with acute schizophrenia could be discharged within less than two months. No recoveries occurred among 44 patients with chronic and subacute schizophrenia, but symptomatic improvement and control could be obtained in a large number of cases. In general, the author's results agree with those of the French workers, but the European literature does not mention the occurrence of jaundice, which had an incidence rate of 3% in

this series of patients and was reported as occurring in 5% of patients treated by Azima and Ogle. The occurrence of this complication appears to be correlated with increasing dosage and length of administration of chlorpromazine. Other side-effects of chlorpromazine therapy are allergic phenomena, orthostatic hypotension, and constipation. Constant and careful medical and nursing supervision are essential whenever the drug is administered in doses exceeding 150 mg. daily. It is hoped that other workers will test the author's method of assessing the value of a therapeutic agent such as chlorpromazine by comparing the duration of the psychotic attack treated by it with the duration of previous attacks in the same patient treated by other methods. This comparison was possible in 22 patients of the present series. The mean duration for the early attacks in these patients was 6.7 months. The mean duration for the later attacks in the same patients was 8.5 months. The mean duration for the last attacks treated by chlorpromazine was 3.2 months. Such an analysis seems more reliable than the simple accumulation of group data that may compare under the common heading of "improvement" such diverse conditions as Huntington's chorea and anxiety neurosis. Future research with chlorpromazine will have to establish its effect on cerebral metabolism, and particularly the acetylcholine turnover in the central nervous system, since it may well be that this drug, like its close chemical relative Phenergan, possesses an antiacetylcholine action on the neuraxis.

PEDIATRICS

Congenital Infectious Hepatitis in Univitellino Twins. H. Garcés and W. Leiva. Rev. chil. pediat. 25:427-436 (Sept.) 1954 (In Spanish) [Santiago, Chile].

Two cases of infectious hepatitis in univitelline twins are reported. The parents were normal. The mother had previously had seven normal children and no abortions. In the seventh month of pregnancy the mother had infectious hepatitis that ran a favorable course for one month and subsided. She did not have injections or blood transfusion during her pregnancy and her illness. The infants were born at full term. They were poorly nourished, had jaundice, great hepatomegaly and splenomegaly, and passed dark urine. The feces were always acholic. The results of tests for incompatibility of blood between the parents and the infants showed compatibility. Tests for liver function showed great functional deficiency. The twins were hospitalized in the pediatric department of the Roberto del Rio Hospital and died at the age of 2½ months. The anatomicopathological changes of the liver corresponded to those of viral hepatitis. Two other infants who had been in contact with the subjects of this report in the pediatric department of the hospital developed viral hepatitis from which, however, they recovered. The authors state that the cases reported constitute a confirmation of the existence of viral hepatitis in newborn infants and the possibility of transplacental transmission of the virus to the fetus, provided that the mother develops the disease during the last two months of pregnancy. In this case, the period of incubation of the virus was completed in the uterus.

Rupture of Spleen: A Complication of Erythroblastosis Fetalis. H. F. Philipsborn Jr., H. S. Traisman and D. Greer Jr. New England J. Med. 252:159-162 (Feb. 3) 1955 [Boston].

Four cases of erythroblastosis are reported in which rupture of the spleen occurred. In one case rupture with hemorrhage into the phrenicolienal ligament occurred before therapy. In the others replacement transfusion was carried out. All infants died, and the splenic rupture was established at autopsy. Splenic rupture was not necessarily the only cause of death, but the primary disease, erythroblastosis fetalis, may have been the cause of death as well as the cause of the splenic rupture. The splenic hemorrhage might have been provoked by the exsanguination transfusion rather than by the erythroblastosis fetalis. The authors discuss the factors that Slotkowski and Hand had mentioned as possibly playing a part in the pathogenesis of splenic rupture in erythroblastotic infants. These factors include extramedullary hematopoiesis, increased phagocytosis, weakening of the supporting structure of the spleen, increased intra-abdominal pressure, damming back of the blood from the liver, increased blood volume displacement of the spleen by an enlarged liver, and a hemorrhagic tendency. Earlier in their experiences with erythroblastotic infants the authors thought that rapid transfusing, or large variations in the blood volume consequent to a single-vein replacement transfusion, might produce rupture of the spleen. They have, however, been unable to produce experimental rupture of the spleen in an animal subjected to extremely large and rapid contraction of the vascular tree. Therefore, they believe that, of all the factors described by Slotkowski and Hand, extramedullary hematopoiesis, increased phagocytosis, weakening of the supportive structures, and the tendency to hemorrhage are the ones most likely to be responsible for splenic rupture in erythroblastotic infants.

Study on Boric Acid Absorption in Infants from the Use of Baby Powders. D. E. Johnstone, N. Basila and J. Glaser. J. Pediat. 46:160-167 (Feb.) 1955 [St. Louis].

A review of the American and British literature of the past decade reveals that all the reported cases of infant mortality attributed to boric acid poisoning have resulted from the injudicious use of boric acid, either from its inadvertent oral administration or intravenous or subcutaneous injection, or from the application of boric acid powder or some homemade preparation having a high concentration of boric acid to an area of denuded or injured skin. With the exception of one nonfatal case in the series of four cases recently reported by Goldbloom and Goldbloom, no case of boric acid poisoning has been proved to be the result of any commercially available baby powder containing no more than 5% boric acid. Blood and urine boron concentration determinations were performed on samples obtained from eight infants with intact skin and one with injured skin before, during, and after application of a commercial powder containing 5% boric acid. The chemical procedures used were sufficiently accurate quantitatively to detect less than one ppm when samples as small as 2 ml. were used. The highest value for blood boron concentration did not exceed 0.6 ppm, a value that, within the limits of the analytic method used, is not significantly higher than the control values and is well within the normal range reported by others. The principal value of boric acid in baby powder is that of a buffering agent reducing the alkalinity of the preparation, which might otherwise be injurious to infant skin.

Corticotropin (ACTH) Therapy of the Nephrotic Syndrome, with Consideration of Follow-Up Results. W. Rupp, W. Swoboda and E. Zweymüller. Helvet. paediat. acta 9:482-510 (Dec.) 1954 (In German) [Basel, Switzerland].

Ten children with the nephrotic syndrome were treated with corticotropin (ACTH) at the pediatric clinic of the University of Vienna. Four boys and three girls between the ages of 5 and 14 years were followed up for from six months to two years. The patients were given intramuscularly 50 I.U. of corticotropin daily in four divided doses, every six hours for 12 days. The total dose given was 600 I.U. The patients were placed on a standard diet with a maximum daily content of 1 gm. of salt. Six of the seven children had a complete remission; two children had a recurrence and were given a second course of corticotropin therapy after an interval of three months and two weeks respectively. The seventh patient with definite nephritis-nephrosis was a therapeutic failure and died. In the course of the first four days of treatment with corticotropin, all patients had retention of water, with increase in weight and edema. This was followed by a sudden onset of diuresis, with urine excretion increased by 321% on the average as compared to the pretreatment period. The maximum single value of the urine was 964%. The edema disappeared completely. Diuresis was associated with a decreased proteinuria, and the latter was accompanied in all patients by an increase of serum protein levels. The total cholesterol, which was at an increased level at the start of the treatment, decreased in the course of the treatment, and alpha$_2$ and beta globulins decreased simultaneously. The erythrocyte sedimenta-

tion rate, which was considerably increased before the institution of the treatment, decreased more or less at the termination of the treatment. These results showed that the daily dose of 50 I.U. was effective and that the sudden discontinuation of the hormone from one day to the other was justified. When a continued favorable effect on the chemistry of the blood cannot be obtained with the first course of corticotropin therapy, second or even third courses will not be more effective, while in those patients in whom the first course of therapy proves effective, a booster course does not seem necessary. The authors agree with other workers that azotemia, hypertension, and infections such as pneumonia, peritonitis, and septicemia are contraindications to corticotropin therapy. Combination of corticotropin with antibiotics is dispensable, provided that daily careful clinical examination of the patients is made. Undesirable side-effects of the drug can be partly prevented by appropriate diet and administration of cation exchange resins. The therapeutic success apparently does not depend on the pretreatment duration of the syndrome, but it definitely depends on the severity of the renal changes, which can be made reversible provided that they are functional. The mode of action of the corticotropin in the nephrotic syndrome has not been elucidated. Observations made by other workers in recent years and the authors' own results suggest that at present corticotropin is the most effective drug in the treatment of the nephrotic syndrome because it simultaneously corrects all the disturbed regulatory mechanisms (water and salt metabolism, dysproteinemia, lipoidemia, proteinuria) and, therefore, most likely brings about a "complete remission" with the greatest speed.

So-Called Unrestricted Diet (Preferable: Normal Diet) in Treatment of Diabetes Mellitus in Children. G. Fanconi. Schweiz. med. Wchnschr. 85:75-77 (Jan. 22) 1955 (In German) [Basel, Switzerland].

From 1920 to the present day four periods of treatment of diabetes mellitus may be distinguished at the pediatric clinic of the University of Zürich, Switzerland. Up to the year 1923, i. e., the period preceding the discovery of insulin, all children with diabetes died within a short period. During the second period, from 1923 to 1932, the diabetic children were placed on a diet containing very little carbohydrate and large amounts of fat. During the third period, from 1932 to 1946, the author introduced a maintenance diet containing fruits and vegetables and very small amounts of protein. Although the initial effect of this diet on the metabolism was favorable, it was responsible for the development of nephropathy, sometimes after three years. Since 1946 the diabetic children have been given normal diet; overfeeding and excessive amounts of food are avoided. The term "normal diet" for this type of regimen is preferable to that of "unrestricted diet," because the diabetic patient should not believe that he is allowed to eat everything according to his fancy. He must accept certain restrictions, in particular, he cannot afford culinary extravagances, and he should eat too little rather than too much. The normal diet has up to now been practiced for eight years with excellent results. Hospitalization of diabetic children is no longer necessary except for the adjustment to long-acting isophane (NPH) insulin. The longitudinal growth has been highly satisfactory, while it was slow with the maintenance diet containing fruit and vegetables and very small amounts of proteins. The normal diet has been primarily successful in mental respects: Hunger, secret nibbling, and lies can be avoided, and self-confidence has better chances of development. Of 60 patients placed on a normal diet, 17 who previously had been for some time on the maintenance diet containing fruits and vegetables and very small amounts of protein were followed up long enough to establish their freedom from any complications such as retinopathy or nephropathy. The normal food did not make administration of considerably increased amounts of insulin necessary. Of the 17 patients, 3 required a smaller amount of insulin, 5 a larger amount, and 9 the same amount of insulin as with the previously used diet. Growth and weight increase was accelerated in most children. The incidence of coma and precoma was reduced by 50%; of the 17 children, 8 had coma before 1946, and only 2 each had coma and precoma in the subsequent period. As long as it has not been proved that late complications such as nephropathy and retinopathy occur earlier with a normal diet than with a strictly controlled diet, one is fully justified in preferring the normal diet, which changes a sick person to an almost healthy one who finds his way in life much better than before.

Salicylate Poisoning. F. H. Harvie and R. B. Singer. A. M. A. Am. J. Dis. Child. 89:149-158 (Feb.) 1955 [Chicago].

Three cases of salicylate poisoning are described in baby boys, aged 4 years, 2 months, and 11 months respectively. In two of these patients salicylate poisoning was caused by accidental ingestion of methyl salicylate and sodium salicylate, respectively, and in one patient by overdosage of acetylsalicylic acid during treatment of an infection. Hyperventilation is the first effect of the ingested salicylate. As a result, carbon dioxide is blown off in excess, the plasma carbon dioxide pressure and carbon dioxide content fall, and the pH rises. If the doses of the drug had been large, a primary metabolic acidosis is soon superimposed on the initial respiratory alkalosis. The changes in acid-base balance during salicylate poisoning are of particular interest to pediatricians, since they are most extreme and most confusing in infants and small children. A method of studying acid-base disturbance is presented. It is readily applicable to the smallest infants and to those most severely ill. It requires very small amounts of blood that are collected by heel puncture without disturbing the patient or interfering with treatment. By permitting a clear separation of the respiratory from the metabolic and renal factors, this method was invaluable in the management of the patients whose treatment could be placed on a rational basis. If frequent measurements of pH and carbon dioxide content are available, therapy can be readily adjusted to changing circumstances, aided greatly by calculation of the buffer base and carbon dioxide pressure. The use of depressant drugs to reduce the hyperventilation is probably contraindicated. The later phase of metabolic acidosis can be ameliorated by use of alkali. In calculation of the dosage of alkali to elevate the plasma carbon dioxide level, a volume factor of one-fifth of body weight (extracellular fluid volume) or one-third (to allow for limited intracellular penetration) will be safer than one of two-thirds body weight, as commonly used. In most situations a small dose will be sufficient to bring the child out of danger and permit reassessment. All three patients recovered.

Amino-Aciduria, Hypophosphatemia, and Rickets in Lead Poisoning: Study of a Case. J. J. Chisolm Jr., H. C. Harrison, W. R. Eberlein and H. E. Harrison. A. M. A. Am. J. Dis. Child. 89:159-168 (Feb.) 1955 [Chicago].

A case of lead poisoning in a 33-month-old boy is described. In addition to the usual well-known clinical findings of acute encephalopathy and anemia, this patient presented hypophosphatemia, glycosuria, aminoaciduria, and the skeletal changes of acute rickets. It is postulated that these findings were related and were primarily the result of a disturbance of renal tubular function caused by lead. The child's initial precarious clinical status responded satisfactorily to the administration of a total dose of 5 gm. of edathamil calcium-disodium given parenterally over a period of five days. Lethargy disappeared after 24 hours of therapy and strabismus and increased spinal fluid pressure after 48 hours. The anemia responded to a four week course of iron given orally. Although a single course of edathamil calcium-disodium therapy effected a total urinary excretion of 21.2 mg. of lead, with a dramatic effect on the patient's encephalopathy, three weeks later evidence of significant biochemical derangement persisted with aminoaciduria, hypophosphatemia with phosphaturia, glycosuria, citraturia, skeletal changes of acute rickets with no roentgenologic evidence of significant deposition of lead in bone, and mild hyperchloremic acidosis. Oral administration of sodium and potassium citrate was started and continued for 18 days. At the end of this period the mild acidosis was corrected and did not later occur. Urinary amino acid output was still above normal, although it had decreased to about 25% of the precitrate-therapy value. Urinary lead output fell to approximately one-third of the control levels. Roentgenologically, on the 10th day of citrate therapy the earliest signs of healing of rickets appeared. After

an interval of 17 days during which there was continued decrease of aminoaciduria and citraturia and the glycosuria disappeared, while healing of rickets and deposition of lead in bone became evident roentgenologically, citrate therapy was resumed; after the patient's discharge from the hospital it was continued at home for 132 days. Serial long bone roentgenograms showed progressive excellent healing of the rachitic process, and at the time of cessation of citrate therapy normal ossification had taken place. Coincident with the complete healing of rickets the serum phosphorus concentrations rose from borderline low levels to well within normal range. The biochemical disturbance thus was reversible; its similarity to that observed in the de Toni-Fanconi syndrome is pointed out. It is suggested that the same or related renal tubular enzyme systems are involved in lead intoxication. It is further suggested, that, in this patient, the principal therapeutic effect of citrate was to accelerate the healing of rickets in the presence of lead-induced renal tubular dysfunction, with the simultaneous deposition and storage of lead in the newly formed bone.

DERMATOLOGY

Pseudoxanthoma Elasticum: Review of Its Relationship to Internal Diseases and Report of an Unusual Case. F. J. Szymanski and M. R. Caro. A. M. A. Arch. Dermat. 71:184-189 (Feb.) 1955 [Chicago].

Pseudoxanthoma elasticum is the cutaneous manifestation of a systemic disease involving elastic tissue. Cardiac and vascular localization of elastic tissue damage, similar to that found in the skin, is believed to be responsible for the development of hypertension, cardiac decompensation, apoplexy, gastrointestinal hemorrhage, intermittent claudication, and a number of other internal disorders seen in patients with pseudoxanthoma elasticum. Paget's disease of bone coexists with angioid streaks often enough to indicate that they are manifestations of one systemic disease. Pseudoxanthoma elasticum has been seen in combination with osteitis deformans in one case. Hyperthyroidism, diabetes mellitus, and diabetes insipidus have been reported in cases of pseudoxanthoma elasticum, but convincing evidence is lacking that these endocrine diseases are manifestations of a systemic elastic tissue disorder. The authors report the case of a 75-year-old, obese woman with a pseudoxanthoma elasticum lesion on her abdomen. Certain features, such as onset late in life, a history of trauma (the patient had worn a corrective corset for umbilical hernia for two years before she noticed the lesion), the atypical appearance of the lesion, its localization on the abdomen without any other skin involvement, and the absence of angioid streaks, suggested that the elastic tissue degeneration was in reality a localized process. However, the patient also had hypertension, cardiac hypertrophy, a tortuous calcified aorta, and kyphoscoliosis, all of which may have been systemic manifestations of pseudoxanthomatosis elasticum. This case might represent a rare form of localized elastic damage produced by the trauma of a tight corset, the systemic symptoms being caused independently by the arteriosclerosis present. On the other hand, it is possible that this case is that of a generalized disease of the elastic tissue that produced systemic effects and that was long latent in the skin, finally making its appearance there late in life after trauma. Examinations of other organs of this patient will be necessary to solve these questions. Benedict and Montgomery reported a case similar to this one in some respects. A Greek laborer, 48 years old, noticed a yellowish lesion developing about the belt line one year before examination. The lesion was attributed to his wearing a tight belt during childhood; however, the eruption was not limited entirely to this area. Angioid streaks were absent.

Acne Vulgaris: Systemic and Topical Treatment. M. R. Moore. Connecticut M. J. 19:93-97 (Feb.) 1955 [New Haven, Conn.].

This study is based on the hypothesis that three systems, endocrine, hematopoietic, and digestive, are involved in acne vulgaris. Therefore, systemic treatment was directed toward the correction of recognizable defects and the maintenance of proper balance among the systems. In addition, local treatment included the topical use of estrogens. Fifty patients (43 females and 7 males) with acne vulgaris, ranging in age from 12 to 42 years, were studied. Over 80% were 25 years of age or under. Initially, after history taking, the patients were given a thorough physical examination. Blood cell counts, urinalyses, and basal metabolic rate determinations were done routinely. The basal metabolic rates were less than zero in 35 of the 50 patients. Patients were questioned about the quality and quantity of their diet. They were given skin tests, and foods causing positive skin reactions were interdicted. Hypoallergenic, no spice, low fat diets were routinely prescribed. The foods permitted and the daily doses of supplementary vitamins are listed. General hygienic measures such as adequate sleep, daily baths, and regular meals and bowel habits were also stressed. Thirty-eight of the 50 patients took thyroid extract in doses ranging from ¼ to 5 grains (16 to 320 mg.) daily. Systemic administration of female sex hormones (estrogens and progesterone) was indicated in some cases. When the latter hormones were employed, they were given rhythmically with the menstrual cycle to improve menstrual dysfunction. Topical agents were used by all of the patients. The affected areas were cleansed with soap and warm water at bed time and allowed to dry. A natural estrogen cream was applied and allowed to remain on the skin overnight. This was removed in the morning and a sulphur-resorcinol ointment applied. In 1952 an alcoholic solution of Dienestrol was substituted for the estrogen cream and proved most effective. Of two representative case histories, the first concerned a 12-year-old girl. One year after beginning treatment her acne disappeared almost entirely and she regained her good humor and interest in work and play.

Local Action of Heparin on Xanthomas. T. Cornbleet. A. M. A. Arch. Dermat. 71:172-176 (Feb.) 1955 [Chicago].

In eight patients with xanthomas, heparin injected into the lesions caused them to flatten and disappear. The lesions in seven of the patients were of the tuberous type, and in one they were of the disseminate type. All the patients with tuberous lesions had elevated blood cholesterol levels; that of the patient with disseminate lesions was normal. It took an average of 12 to 15 injections of no more than 5,000 units of heparin once or twice a week to flatten the majority of the xanthomas. Control injections of distilled water or sodium chloride solution were administered in an attempt to find out whether the lesions could be influenced by pressure alone. There was no involution after this treatment, but this fact does not prove conclusively that pressure per se is not a factor in flattening the lesions. Histopathologically speaking, one of the earliest changes in the lesions is the breaking up of the solid masses. These become converted to smaller islands and small groups of cells. The Touton giant cells also disappear with the first injections. There is a slight infiltration of plasma cells and lymphocytes and a sparse appearance of the collagen bundles and fibroblasts. With continuing injections the foam cells lose their fat-staining material, though not all at the same rate. Some have barely lost any when others appear as ordinary histiocytes, some containing hemosiderin. They shrink somewhat as they lose their lipoidal content. New capillaries appear, and collagen increases to form areas of fibrosis. The so-called clearing effect of heparin or lipemic plasma is a possible mechanism of its action locally on xanthoma.

Roentgen Therapy of Cutaneous Staphylococcic Infections. P. Pizon. Presse méd. 63:114-116 (Jan. 29) 1955 (In French) [Paris, France].

The present series of patients with cutaneous micrococcic infections treated by roentgen therapy consists of 118 cases of furuncle or anthrax, of which 84 were located on the face; 11 cases of paronychia; 15 torpid inflammations; and 14 cases of hidradenitis. The development of the focus of infection is usually abortive, or else leads to either a small aggregation of seropurulent lesions or a concentrated core with rapid spontaneous elimination. If the end-result is the formation of a circumscribed phlegmon, which happens infrequently, this well-delineated phlegmon can be totally evacuated with ease by means of a small incision. The mechanism whereby radiological treatment cures these infections is complex; the important

factors in it are: cytolysis of hyperabundant leukocytic elements, stimulation of the reticuloendothelial system, and sympathicolytic action reinforcing capillary vasodilatation. Good results can be obtained with low dosage: 200 to 300 r given in two or three sessions for furuncles or anthrax, 300 to 400 r for paronychia, and 500 to 1000 r for hidradenitis. Higher doses are required for the last disease because of glandular changes and the association of Saccharomyces with micrococci. The value of roentgen therapy in these disorders has been known for a long time; this report seeks only to reaffirm it.

OPHTHALMOLOGY

Beta Radiation Cataracts. J. E. McDonald, W. F. Hughes Jr. and V. G. Peiffer. A. M. A. Arch. Ophth. 53:248-259 (Feb.) 1955 [Chicago].

For about 14 years beta radiation from radium and radon has been used successfully in the treatment of certain external ocular conditions because of the relatively superficial effect and accurate localization of the radiation. Recently, cataract has been reported following the extensive use of beta radon in two eyes with severe vascularizing keratitis, and other clinics have substantiated the possibility of this complication. The depth dose of the beta particles of radioactive yttrium (Y^{90}) is comparable to that of radium and radon. Wilson and von Sallmann independently reported that changes could be produced in the lens of the rabbit eye by the radioactive strontium (Sr^{90}) applicator, which is commercially available to physicians. McDonald and associates report studies that had the purpose: (1) to determine the minimum cataractogenic dose of radon and Sr^{90} in rabbits; (2) to describe the type and progressiveness of the lens opacities produced; (3) to report the results of follow-up examinations of the lenses of those patients previously treated with beta rays, and (4) to reevaluate the clinical indications and dosages of beta radiation therapy. The eyes of the rabbits in which the minimum cataractogenic dose had been ascertained have not been followed sufficiently long to determine the degree of progressiveness or regression of the cataracts. However, two eyes exposed to 1,000 rep developed minimal opacities around the posterior suture at five months, and such opacities could no longer be seen at eight months. In general, the degree of opacification showed less change once the opacities had reached the posterior pole. Seventy-three radon-treated eyes of patients were reexamined through a widely dilated pupil. Of these, 45 had definite radiation opacities and vacuoles, 13 had questionable opacities, and 15 had no radiation opacities. The changes were similar to those seen in the rabbit experiments. In some patients with cortical opacities typical of senile cataract, the presence of typical beta radiation vacuoles could be distinguished. The cataractogenic potentialities of beta radiation must be considered in the clinical use of beta radiation on the eye. Because of the localization of beta therapy, its use in certain conditions of the lids, such as vernal catarrh, would not jeopardize the lens. The radium D applicator, with a depth dose of only 10% at 1 mm., would not endanger the lens, although other deficiencies make it less effective in the treatment of certain corneal conditions, such as deep vascularizing keratitis. It might well be the treatment of choice for recurrent pterygium, where the use of radium, radon, or Sr^{90} would be contraindicated except in unusual forms of very "malignant" recurrences. Radiational cataracts can progress for a while and then become stationary, or regress. This factor, together with the visual unimportance of a few nonprogressive peripheral vacuoles or dust-like opacities in the lens, might still permit the use of beta radiation to the globe in carefully standardized doses. On the other hand, certain conditions may even warrant the risk of cataract, because of the visual disability caused by the corneal disease, e. g., severe vascularizing keratitis, vascularization complicating keratoplasty, and epithelioma.

Spontaneous Regression of a Malignant Melanoma. V. B. Levison. Brit. M. J. 1:458-459 (Feb. 19) 1955 [London, England].

A 60-year-old man underwent excision of the right eye for malignant melanoma of the choroid. Two years later clinical examination revealed no evidence of recurrence. The liver was not palpable. A roentgenogram of the chest showed multiple small opacities at the base of the left lung, and examination of the urine at the same time showed melanogens to be present. The patient was accordingly considered to have pulmonary metastases. The presence of melanogens in this urine was shown by the ferric chloride in hydrochloric acid test and by Thormählen's nitroprusside reaction. No treatment was given. When the patient was seen again about four and a half months later the pulmonary metastases could not be seen and there were no melanogens in the urine. This situation has remained the same at several examinations since. In this patient there was no obvious cause for the regression of the metastases, such as an acute infection. Since necrosis can bring about regression and apparent cure of the primary choroidal tumor, and since necrosis, probably arising from the fact that the tumor outgrows its blood supply, is a prominent feature of choroidal melanoma, it is thought that this was the causal mechanism of the phenomenon.

Effect of Alcohol on Binocular Vision. G. A. Brecher, A. P. Hartman and D. D. Leonard. Am. J. Ophth. 39:44-52 (Feb.) 1955 [Chicago].

Alcohol produces double vision; the purpose of the present investigation was to ascertain whether alcohol diplopia can be attributed to change in phoria and loss of convergence power as previously postulated or to an impairment of the binocular fusion reflex. Experiments were made on 14 male medical students. The experiments began at 7 p. m., after a light evening meal. Visual acuity, convergence, phoria, and fusion power were determined. The subjects were then given 40 ml. of an 87-proof blended whiskey, mixed with 99 ml. of either water or ginger ale, and this was repeated every half hour. At hourly intervals after the start of the first drink, the subject repeated the vision tests. At the end of each of these tests, 2 ml. of blood was removed from the antecubital vein and a urine sample was obtained. In this manner, blood and urine samples were taken at hourly intervals, whereas the drinks were given at one-half hour intervals. This routine was continued until the subject vomited or was incapable of cooperating in the conduct of the experiment. A new method, in which the strength of binocular fusion could be determined by measuring the time necessary to accomplish binocular fusion, revealed that diplopia is caused by the progressive impairment of the binocular fusion reflex with rising levels of blood alcohol content. This impairment of the fusion reflex occurs regardless of changes in phoria and of the weakening of voluntary convergence. The decrease in binocular fusion power is due to an impairment of the general neuromuscular coordination by alcohol, which at the same time affects the position of the visual axes and diminishes the power of voluntary convergence. Phoria and fusion power were measured at 600 cm., 82 cm., and 33 cm. observation distances. With rising alcohol levels, marked esophoria developed progressively at 600 cm., only little esophoria at 82 cm., but marked exophoria at 33 cm. This indicates that the visual axes come to a "position of rest" at a distance slightly less than 82 cm. (about 60 cm.) under strong alcohol intoxication. This evidence supports the hypothesis that binocular vergence is normally controlled by two different mechanisms, a convergence and a separate divergence mechanism, since the removal of these mechanisms by alcohol causes the eyes to assume an intermediate or neutral position.

THERAPEUTICS

The Circulatory Effects of Reserpine. E. G. McQueen, A. F. Doyle and F. H. Smirk. Circulation 11:161-169 (Feb.) 1955 [New York].

The effects of large doses of reserpine, the pure alkaloid derived from Rauwolfia Serpentina (Benth), on the blood pressure were compared in 33 patients with hypertension and in 12 persons with normal blood pressure. The lowering of blood pressure in the hypertensive patients varied from that to be expected with placebos to large falls, occasionally to normal levels. Falls of blood pressure were much smaller in persons with normal blood pressure. By contrast the associated symptoms, such as

facial flushing, conjunctival injection, miosis, nasal congestion, shivering, diarrhea, and sleepiness, did not differ to any appreciable degree in the persons with normal blood pressure from those noted in the patients with hypertension. The drop in blood pressure was accompanied by cutaneous vasodilatation. Animal experiments showed that cutaneous vasodilatation also occurs in animals. Severance of the cervical sympathetic chain in 18 rabbits resulted in abolition of the cutaneous vasodilatation; it showed that this effect is mediated by way of the sympathetic nervous system. Further experiments in both rabbits and cats revealed modification of reflex vasomotor cardiovascular responses by reserpine. The hypotensive effect of reserpine, however, cannot be solely ascribed to its action on the sympathetic nervous system. In anesthetized rabbits a direct vasodilator effect on blood vessels was shown. In man, ganglionic blockade with hexamethonium produced a lower blood pressure after reserpine had been given than before. It seems that in man, as in rabbits and possibly in cats, reserpine may have a direct peripheral vasodilating effect in addition to an effect mediated through the sympathetic nervous system.

Treatment of Hypertension with Reserpine, with Reserpine in Combination with Pentapyrrolidinium, and with Reserpine in Combination with Veratrum Alkaloids. A. E. Doyle, E. G. McQueen and F. H. Smirk. Circulation 11:170-181 (Feb.) 1955 [New York].

Reserpine in doses of 0.5 to 1.5 mg. per day was given a therapeutic trial in 40 patients with hypertension. In 10 of these, blood pressure control was sufficiently good for reserpine therapy to be used as the treatment of choice. Even with the low doses used, side-effects such as conspicuous conjunctival injection, nasal blockage, sensations of fatigue and sleepiness, depression, and shivering presented some difficulties, particularly in the aggravation of symptoms in patients with bronchial asthma, ulcerative colitis, gallstones, and preexisting mental depression, which occasionally prohibited the use of the drug. Other side-effects such as diarrhea, undue susceptibility to cold, and excessive gains in weight were not as a rule sufficiently severe to prevent the use of the drug. Sixty-nine patients were treated with a combination of reserpine and pentolinium tartrate; in 53 patients, the addition of reserpine to the methonium compound led to an improvement in the hypotensive action, with a reduction in the severity of the side-effects caused by parasympathetic blockade. The administration of veratrum alkaloids to 10 patients already taking reserpine did not produce any further significant hypotensive effects except in toxic doses. The combination of reserpine and pentolinium tartrate is the most satisfactory means at present available of treating severe hypertension, although some patients with mild hypertension may be managed with reserpine alone.

Combined Rauwolfia-Hydralazine Therapy of Hypertensive Patients. C. F. Naegele, R. H. Rosenman, C. L. Hoffman and M. Friedman. Circulation 11:182-187 (Feb.) 1955 [New York].

Blood pressure responses of 33 ambulatory and 13 hospitalized patients with hypertension were studied under controlled conditions in the course of combined treatment with Rauwolfia serpentina and hydralazine. The patients were given 4 to 8 mg. of purified extract of Rauwolfia serpentina (Rauwiloid) daily orally. After one week to three months, hydralazine was added in an initial oral dose of 75 mg. daily and rapidly increased up to 600 mg. daily given in four divided doses. Adequate lowering of the blood pressure was achieved in most patients with mild or moderate hypertension and frequently in those with severe hypertension. An inadequate response to the drugs occurred only in patients with severe, chronic, fixed hypertension, or with hypertension of apparent renal origin. Administration of Rauwolfia serpentina preceding that of hydralazine largely prevented untoward effects, such as headache, tachycardia, and palpitation, which are prone to occur when initiating therapy with hydralazine, and permitted initial administration of hydralazine in moderate doses. Concomitant administration of Rauwolfia serpentina appeared to permit effective therapy with hydralazine in significantly smaller doses of the latter drug than those required if hydralazine were used alone. Ease of administration of the drug and follow-up of the patient was thus permitted, avoiding the more serious side-effects of hydralazine, which can occur with large doses given over long periods, and requiring only bimonthly or monthly routine check of blood pressure.

Chlorpromazine Treatment: Side-Effects and Complications. E. Giacobini and B. Lassenius. Nord. med. 52:1693-1699 (Dec. 2) 1954 (In Swedish) [Stockholm, Sweden].

From February through September, 1954, 147 women from 19 to 81 years of age were treated with chlorpromazine (hibernal, largactil). The sedative effect was good in most cases of confusion, manias, and conditions of unrest, and the symptoms were influenced in schizophrenia. Cases of anxiety due to various causes, also hallucinations, reacted well to the treatment. Side-effects and complications in connection with the treatment were frequent, but were as a rule mild and transient. The most common were neurological disorders of extrapyramidal type, dermatological and hematological disturbances, disturbances in liver function, and slight rise in temperature. The extrapyramidal symptoms disappeared on treatment with anti-Parkinsonism agents. Only 6% of the patients had more serious complications: three patients had syndromes resembling paralysis agitans (Parkinsonism), four jaundice, one patient granulocytosis, and one subchronic dermatitis. The authors conclude that treatment with hibernal is without danger if the patients are regularly controlled during the first two months and if combined hibernal-lergigan treatment is given. Comparison of the groups treated with only hibernal, with hibernal and lergigan, and with hibernal, lergigan, and barbiturates showed the highest incidence of complications to be in the last-named group. Extrapyramidal symptoms occurred in 3.8% of the patients given combined hibernal-lergigan treatment and in 19.1% of those given hibernal only. Chlorpromazine is contraindicated where the nervous system is strongly affected by narcotic or hypnotic substances and in grave disorders of aplastic type in hematopoiesis, as well as in patients undergoing treatment with thiouracil, amidopyrine, or like agents.

Toxic Liver Damage After Largactil (Chlorpromazine). G. Grytting. Nord. med. 52:1699-1701 (Dec. 2) 1954 (In Norwegian) [Stockholm, Sweden].

Two cases in patients with nervous disease treated with largactil indicate that the substance can cause jaundice of the "intrahepatic occlusion" type sometimes with long duration, but the prognosis seems to be good. Examination of the liver is advised before use of largactil. In the first case laparotomy revealed no atrophy or stricture in the liver; biopsy showed signs of biliary obstruction, regressive changes and some interstitial inflammation in the liver tissue. After 10 weeks corticotropin (ACTH) was given, with good result. In the second case, milder and of shorter duration, the jaundice disappeared after phenergan treatment.

Clinical Evaluation of Thiocymetin—A New Antibiotic. O. Feinsilver. Am. Pract. & Digest Treat. 6:34-41 (Jan.) 1955 [Philadelphia].

Thiocymetin (WIN 5063-2) is a white, crystalline powder, neutral in reaction, soluble in water and in either acid or alkaline urine, and stable after several hours of boiling in neutral water. It is free of any hemolytic action in isotonic suspensions of erythrocytes and free of precipitating effects on serum. In vitro experiments have demonstrated its bacteriostatic and bactericidal effects on a variety of gram-positive and gram-negative organisms. By means of tests in vivo, with Swiss mice weighing 20 gm. each, the drug has been found effective in infections with Streptococcus pyogenes, Pasteurella bovisepticа, Klebsiella pneumoniae, and Brucella melitensis. It was found to be free of toxic effects when used in daily doses of 100 mg. per kilogram of body weight over a period of 28 days. Intravenous in-

jections in a 2% solution of 800 mg. per kilogram of body weight were not lethal. Anorexia and vomiting developed within 7 to 10 days in dogs that had received 160 mg. per kilogram of body weight of the drug per day. Thiocymetin was given to 54 persons, 10 of whom had pneumonia; 35, acute and chronic bronchitis; 4, bronchiectasis and chronic bronchitis; 2, acute cystitis; one, acute suppurative ethmoiditis; one, chronic sinusitis; and one, chronic pharyngitis. Bacterial cultures were obtained in all but four instances. The results were good; only two cases were uninfluenced: one a case of chronic bronchitis and the other a case of sinusitis in which no bacteriological information was available. One patient with cystitis due to Proteus organisms was improved to complete elimination of the infection. In two instances the drug was used effectively despite failure to demonstrate its inhibitory effect on the causal organisms in the laboratory. In two instances the drug was used successfully after intolerance to other drugs was encountered, and in two more it was used successfully after other drugs, shown in the laboratory to be effective, failed to influence the patients' clinical course. In regard to toxic effects, 10 patients (19%) showed a 15 to 20% reduction in either erythrocyte count, hemoglobin level, or both. No cases of leukopenia were noted. In 24 patients (44%) some diarrhea was noted, in 3 instances considerably severe. Usually a reduction in dosage eliminated the diarrhea. There was one case of papular eruption. It is concluded that Thiocymetin is valuable and should be studied further.

Studies of Bacterial Transfusion Reactions from Refrigerated Blood: The Properties of Cold-Growing Bacteria. A. I. Braude, F. J. Carey and J. Siemienski. J. Clin. Invest. 34:311-325 (Feb.) 1955 [New York].

Reactions have resulted not only from transfusion of blood contaminated with such bacteria as the coliforms, which grow best at 37 C, but also from transfusion of blood contaminated with certain unusual gram-negative bacilli that are capable of better growth in the refrigerator at 4 to 8 C than in the incubator at 37 C. The studies reported here were undertaken to ascertain the rate of growth and survival of these bacteria in refrigerated blood and in blood at room temperature; the effects of their growth on the blood itself; the in vivo toxicity of these bacteria, as determined by experimental transfusions in animals; their susceptibility to agents that might be used to suppress their growth at low temperatures; and the protection of animals from their toxic effects. Three methods were used to collect bacteria that could grow at 4 to 8 C: 1. Samples of feces, nasal discharges, air, dust, ice, soil, and snow were inoculated directly onto tryptose agar slants and incubated in the refrigerator at 4 to 8 C. 2. Materials were obtained from persons and articles in the blood bank and inoculated into banked citrated blood and tryptose phosphate broth for incubation at 4 to 8 C. 3. Secreta, excreta, and exudates from patients and hospital personnel were cultured on blood agar at 37 C and the bacteria isolated were identified and tested for growth at 4 to 8 C by subculturing to tryptose phosphate broth and incubating in the refrigerator. In addition to these bacteria of human origin, bacteria were also isolated at 37 C from articles in the donor room of the blood bank and elsewhere in the hospital for study of growth in the cold. It was found that bacteria capable of heavy growth at refrigerator temperatures (4 to 8 C) can be easily recovered in the blood bank from potential sources of contamination for stored blood. The majority of these cold-growing contaminants are gram-negative bacilli, which have been identified as pseudomonads, coliforms, and achromobacters. Their toxic potency is nearly equal to that of the endotoxins of common intestinal bacilli. Because even small inoculums can resist the bacteriostatic action of blood and multiply quickly to lethal numbers in the refrigerator, these cold-growing bacilli constitute a grave threat to recipients of contaminated banked blood. They may be consistently suppressed, however, in blood containing such minute amounts of tetracycline antibiotics that risk to the recipient from the antibiotics is unlikely.

PATHOLOGY

Cytological Prognosis in Cancer of the Uterine Cervix Treated Radiologically. R. M. Graham and J. B. Graham. Cancer 8:59-70 (Jan.-Feb.) 1955 [Philadelphia].

The method of determining the radiation response in the vaginal smear of patients with cancer of the cervix is described in detail. The method is based on four changes in the benign squamous epithelial cells: vacuolation of the cytoplasm, nuclear changes, increase in nuclear and cell size, and the presence of multiple nuclei. If more than 75% of the benign epithelial cells show any of these changes, the case is considered to have a good response from the prognostic viewpoint. If less than 60% of the cells exhibit changes, the case is classified as a poor response. Five year results on 142 patients with cancer of the uterine cervix treated by radiation and divided into poor and good response groups are presented. The five year survival in the good response group was 65%, in contrast to 8% in the poor response group. The immediate practical application of radiation response determination lies in the recognition of those patients who are insensitive and are not being benefited by irradiation at a time when additional effective measures are still possible rather than weeks or months later when the growth of the tumor and the vascular impairment from radiation make further therapy futile. Two patients with tumors of similar histological appearance and clinical extent treated in a similar manner may respond quite differently; one may be cured and the other die. The cytological radiation response will distinguish about two-thirds of the patients in the latter category at the time of their primary treatment. The two serious obstacles hampering the method are (1) that large biopsies including both normal and neoplastic tissue must be taken before and during treatment, and (2) that interpretation of the findings requires the services of a highly skilled cytologist.

Prognosis in Irradiated Cancer of the Cervix by Measurement of Cell Size in the Vaginal Smear. R. M. Graham and K. R. Goldie. Cancer 8:71-77 (Jan.-Feb.) 1955 [Philadelphia].

Measurements of the cornified and precornified cells of the vaginal smear during irradiation show a size increase. The increase in size is proportional to the effectiveness of the radiotherapy, as measured by the survival rate in 100 patients with cancer of the uterine cervix followed up for five years. Measurements performed by 11 technicians on the same smears of 19 patients showed a 79% accuracy. Cell measurement provides an inexpensive and fairly reliable prognostic index similar to but somewhat less precise than that which can be obtained by radiation response as judged by differential count. The advantage of the cell measurement technique is that it can be done by relatively untrained personnel.

The Influence of the Thyroid in Malignant Disease. J. G. C. Spencer. Brit. J. Cancer 8:393-411 (Sept.) 1954 [London, England].

Data from 15 countries in four continents support the importance of local factors for the known local variations of cancer incidence. The availability of iodine, which can be traced by the incidence of goiter, appears to be one of such factors. Spencer points out that the metabolic rate in man decreases progressively with increasing age, and the incidence of malignant disease increases progressively with age. The incidence of malignant disease thus seems to be correlated with the decrease in metabolic rate. As metabolic rate is in general a rough indication of thyroid activity, there would appear to be some relationship between malignant disease and thyroid dysfunction. Administration of thyroid has been found to improve the action of estrogens in the treatment of carcinoma of the prostate, permitting the effective use of smaller doses of estrogens and delaying the onset of insensibility to estrogens. Reduction of keloid formation can often be brought about by administration of thyroid. It has been observed in animal experiments that the incidence of tumors at the site of injection of chemical carcinogens is reduced by a single injection of thyroxine, and metabolic studies have shown that the rate of disappearance of the car-

cinogen from mice is significantly increased by thyroxine treatment. A low metabolic rate or an insufficiency of thyroid substance can in no way be considered as a primary cause of cancer. Thyroid and related substances cannot therefore be considered as a cure for cancer. It is, however, suggested that thyroid function (or dysfunction) may be associated with the susceptibility or immunity to cancer. Therefore, thyroid might well be used as a therapeutic weapon, ancillary only to accepted surgical treatment. In the wider and perhaps more important field of preventive medicine, the possibility that an increased susceptibility to cancer occurs in those with a poor thyroid function leads for the first time to a real chance of adopting prophylactic measures against cancer on a wide scale. The measures adopted would be in the main those already available against goiter in the young and in adolescents, with the idea of building up healthy active thyroid glands during their period of development; and in adult life steps would be taken to maintain a good level of thyroid activity by insuring that iodine is available in suitable quantities in food and drink, especially when middle life is reached and there is a natural tendency for the iodine level to fall.

Experiments to Shorten the Animal Test for Tuberculosis. B. Uiberrak and H. Hackl. Beitr. Klin. Tuberk. 112:426-429 (No. 6) 1954 (In German) [Berlin, Germany].

Uiberrak and Hackl regard the guinea pig as the classical animal for the detection of tuberculosis. They prefer subcutaneous and intraperitoneal inoculation, rejecting the intraocular method and crushing of the regional lymph nodes as too painful and the intravenous and intraglandular method as technically difficult. Since, according to recent investigators, the swelling of regional lymph nodes is not necessarily the first symptom, the authors employed in addition to the subcutaneous also the intraperitoneal injection. Because tuberculosis can at times be demonstrated as early as four weeks after intraperitoneal inoculation, the animals are killed and examined in some laboratories after this brief period, which the authors regard as too short. It has also been suggested that tuberculin tests be performed three or four weeks after the inoculation, but in view of the great susceptibility of guinea pigs to tuberculosis, a positive tuberculin reaction may develop in them as the result of mere contact with other infected animals. It was proposed to use two animals for each test and kill one after four weeks and the other after from two to four months, but budgetary reasons would make this impossible in some institutes. The authors suggest as a solution a laparotomy after four weeks and then the killing of the animal after from two to four months. They outline a laparotomy technique that has proved harmless for most guinea pigs. Employing this technique, they found among 15 animals 2 that after the fourth week showed no indications of tuberculosis, but one of these 2 animals died at the end of two months with typical peritoneal tuberculosis and the other showed tubercles in the liver at the second laparotomy during the ninth week. In twelve animals that had been inoculated with various tuberculous materials laparotomy was done repeatedly: in one at the end of one and of six months, in four after three and seven months, and in three after four and seven months. No peritoneal tuberculosis was ever observed after more than 2½ months. The authors feel that laparotomy of the test animal after four weeks and autopsy after from two to four months is to be recommended.

Morphological Contribution to the Study of Lipid Nephrosis. E. Mazza. Riv. anat. pat. e onc. 9:1084-1117 (Sept.) 1954 (In Italian) [Padua, Italy].

Lipid nephrosis is an extremely rare disease, the cause of which is still obscure. It has been ascribed to infectious, toxic, endocrine, and constitutional factors, but a toxic bacterial action seems to be the most probable cause. This has been the commonest causative factor reported in the literature, despite the fact that it does not explain satisfactorily the characteristic renal alterations of the disease and its modes of development. Currently two views are held with regard to this condition. 1. The renal lesions constitute the primary focus and the other symptoms are secondary. 2. The disease is a disturbance of the metabolism and as such the main alteration is not in the kidney but elsewhere in the body. At autopsy the kidney is enlarged, has a yellowish capsule, and weighs about 250 gm. Microscopically the tubule is altered, especially in the convoluted part; Henle's loop is less involved, and Bellini's duct is not impaired. The alteration in the tubule consists mainly of the presence of lipids and lipoids in the epithelial cells. These fat substances are doubly refractive; they are the same anisotropic lipoids that are found in the urine; and the histochemical examination shows that they consist mainly of cholesterol. The lesions in the glomerulus depend on the duration of the condition and represent a swelling of the walls of the vascular tuft and of Bowman's capsule and often a hyaline type of degeneration of the glomerulus. A deposition of doubly refractive substances may also be found at times but to a lesser degree than in the tubules. Although various hypotheses have been advanced, the lesions in the tubuli and the glomeruli are probably concurrent. It remains to be established whether the morphological finding in lipid nephrosis is a degenerative process in the true meaning of the word or a cumulative one, namely, a thesaurismosis. The author feels that the process in the tubules is primarily of a cumulative type and that later the cells may undergo regressive phenomena because of the altered cellular trophism caused by the chronic presence of fats. The anatomicopathological findings in the thyroid, parathyroids, hypophysis, adrenals, pancreas, and liver of patients with this condition are reviewed. The history and autopsy and histological findings of one patient with lipid nephrosis seen by the author are reported.

Pathogenesis of Cardiac Infarct Without Coronary Occlusion. F. Barboni and G. Tumiotto. Arch. pat. e clin. med. 31:351-364 (No. 5) 1954 (In Italian) [Bologna, Italy].

The records of the Institute of Pathological Anatomy of the University of Bologna indicate that no coronary lesion except slight signs of atherosclerosis was found at autopsy in 15 of 131 cases of cardiac infarct. Barboni and Tumiotto made an anatomicopathological study of these 15 cases. Two of the patients had died of a pulmonary infarct, the others of acute myocardial insufficiency. The fatal episode was always secondary to a cardiac infarct. In all, the clinical picture had always been the classical and common one of myocardial infarction, and the electrocardiograms had always revealed signs of necrosis in the ischemic area. Macroscopically these hearts did not differ greatly from those of patients with cardiac infarct. The anatomic examination showed the presence of infarcts mainly around the anterior descending branch of the left coronary artery. In not one case did the main coronary ramifications show signs of stenosis or occlusion of the lumen; only in some segments was there a slight asymmetric decrease of the lumen owing to hyalinosis of the intima. The most striking finding in these hearts was the marked discrepancy between the condition of the coronary arteries and the extension of the infarct. The authors made a histological study of seven hearts in this series. They found sclerotic lesions in the arterioles and in the smallest arterial arborizations near the area of the infarct as well as in other parts of the myocardium. These lesions consisted of an edematous swelling of all the coats with endothelial hyperplasia, but more often with a fibroblastic proliferation of the media and a decrease in the size of the lumen. The impairment of the small intramural coronary vessels assumes a role of primary importance. The extensive involvement of the arteriolar-capillary system explains how contingent factors such as spasms may on one hand alter definitively and irreversibly a circulatory balance that is already extremely precarious and on the other hand prevent the formation of an adequate collateral circulation. Thus at the basis of the so-called infarct without coronary occlusion is a constant morphological lesion of the smallest arteriolar and capillary ramifications. The sclerosis of the small ramifications with the resulting, more or less marked, stenosis is the basic alteration on which the infarct develops. In view of these results, one can no longer speak of infarct without organic basis just because the macroscopic examination does not reveal a coronary occlusion.

BOOK REVIEWS

The Mental Hospital: A Study of Institutional Participation in Psychiatric Illness and Treatment. By Alfred H. Stanton, M.D., and Morris S. Schwartz, Ph.D. Cloth. $7.50. Pp. 492. Basic Books, Inc., 59 Fourth Ave., New York 3, 1954.

This volume reports the findings of a research project by a psychiatrist and a sociologist into the inner workings of a private mental hospital. It reveals, for the first time, how the administrative practices of a hospital influence the behavior of patients and the clinical course of their illnesses. It shows how tension and excitement among the patients was related to disagreements and disharmony among the members of the hospital staff and how these conditions disappeared when the disturbances among the professional personnel no longer prevailed. In addition to the formal structure of the hospital, which included the organizational hierarchy, the rules, and the procedure, the authors also observed the operations of an informal structure that consisted of the attitudes, biases, and personal relationships of the patients to one another, to the staff, and to the community. D. M. Bullard, the physician in charge of the hospital in which this research project was conducted, began the foreword to this volume with the following significant statement: "This book is both disturbing and encouraging; disturbing because it highlights the imperfections of current hospital practices, and encouraging because it indicates how change and improvement may be brought about. It is a serious inquiry into the social setting in which hospital administration occurs, and it concerns itself primarily with the frequently unrecognized forces which influence patient and staff behavior." This book contains a wealth of information regarding the care of patients in mental hospitals. It is unusually well written, and many of the authors' findings can contribute to important changes in the administrative practices of other psychiatric hospitals. An excellent bibliography and index are included.

Nerve Blocks: A Manual of Regional Anesthesia for Practitioners of Medicine. By John Adriani, M.D., Director, Department of Anesthesiology, Charity Hospital of Louisiana, New Orleans. Cloth. $6.50. Pp. 265, with 168 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto, 2B, Canada, 1954.

Dr. Adriani's "Pharmacology of Anesthetic Drugs," written in 1940, and his "Chemistry of Anesthesia," which appeared in 1945, were enthusiastically acclaimed by students, residents, clinical anesthetists, and teachers in anesthesiology. Those interested in anesthesiology had been beset by more than ordinary frustrations in their efforts to apply the essential principles of the basic sciences to the practices of anesthesia. These frustrations arose largely because there were so few sources in which the anesthesiologist or student could find without tedious effort the pertinent factual data interpolated into principles directly applicable to anesthesiology. These two books satisfied these needs abundantly and authentically.

His latest book, while brightened with some excellent sections, notably that concerning the toxicity of local anesthetic agents in the first chapter, that discussing epidural and caudal anesthesia, and that describing peripheral somatic nerve blocks, is nevertheless generally disappointing. This disappointment stems in part from the improbability of maintaining the standard of the first two books and in part because of the recent publication of several superior books on the subject. The major source of disappointment, however, is probably the result of failure to achieve the almost impossible goal of presenting "in an outline form . . . designed for those who desire at a moment's notice the substance of a given topic together with all pertinent details concerning hazards, precautions and causes of failure" for "beginners in the study of regional anesthesia" and physicians intent only on performing occasional nerve blocks. The preparation of such a manual is an exacting task, and no author could be so circumspect in choosing the individual procedures to be included that he would win universal agreement in the wisdom of his choices. Several basic requisites, however, seem to be not only justified but obligatory. The choice of techniques should insofar as possible be limited to those that are generally conceded to be practical, useful, and reasonably safe. When drawings and illustrations are used they should be meaningful, attractive, and clearly reproduced. Above all, descriptions of techniques should be lucid, specific, and as nearly as possible incapable of misinterpretation.

The opening chapter contains an excellent outline of the physical, chemical, and physiological properties of local anesthetic drugs. The remainder of this chapter is devoted to tables of accepted data concerning the relative toxicity of local anesthetic drugs in their various concentrations and is a list of practical do's and don'ts for the safe and successful performance of nerve blocks with the reasons for each suggestion. The remaining sections of the book concern paravertebral block anesthesia, cranial nerve blocks, peripheral nerve blocks, field blocks, and spinal anesthesia and epidural anesthesia. The book ends with a short table in which suggestions are made for suitable blocks for operations in a specific body location and a longer table in which particular blocks are recommended for their diagnostic or therapeutic value.

Keeping in mind the avowed intent of the manual, to discuss nerve blocks for the learners and the physician occasionally using nerve block, the table of contents appears to be appropriate. The pages devoted to spinal and epidural anesthesia are credible and creditable. The author exercises admirable restraint in omitting refrigeration anesthesia and intravenously administered procaine. In the descriptions of peripheral somatic nerve blocks, e. g., suprascapular, posterior tibial, and obturator, simple diagrammatic drawings and concise anatomic facts are used to augment the terse technical directions to decided advantage. Some of the sections devoted to particular nerve blocks, however, are questionable. It is doubtful that many of the cranial nerve blocks or any paravertebral thoracic blocks should be attempted by beginners or those using nerve block only rarely. The techniques described for sympathetic blocks, which far outrank any others for diagnostic and probably for therapeutic purposes, fail to discriminate between tested procedures and difficult or awkward alternatives. In the discussion of stellate ganglion block more attention is directed toward the difficult posterior approach than the easier and safer anterior or anterolateral approaches. Moreover, the attitude expressed toward stellate ganglion block, "Remember that stellate ganglion block is fraught with dangers and should be performed only by experienced individuals," is in contrast with the generally accepted view that this is probably the most valuable single block procedure and should be safely feasible for most physicians.

The line drawings are simple and highly diagrammatic. The reproductions of photographs are in general substandard, many being so dark the detail is obscure. The index is adequate.

The Health of Regionville: What the People Thought and Did About It. By Earl Lomon Koos. Cloth. $3.25. Pp. 177, with 20 illustrations. Columbia University Press, 2960 Broadway, New York 27, 1954.

The author devoted four years to a survey of an economically average rural and small town area in an Eastern state. One gets the impression that the survey was designed to support the predetermined concept "that social class consciousness determines in large measure health needs and medical care." Since the study was under the direction of sociologists, we must expect ideas, techniques, methods, and conclusions to be subject to the interpretation of sociologic thinking. The author has done an excellent job in this respect. The survey represented the individual family experience and opinion elicited not only

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once but 16 times at four-month intervals. A panel of 514 families out of a total of 2,400 scattered over the treatment area was enlisted for this sampling.

The data concerning medical resources and the habits and reactions of the citizens to illness are used not to find a better usage, if possible, but to emphasize social class relationships as they affect health decisions. If this survey had been truly interested in medical care and in the avoidance of health hazards, the emphasis and conclusions would have been different. Health was used merely as a yardstick by which the author sought to evaluate social reactions. I doubt if social reactions stimulated by illness, medical care, and medical resources can be lifted out of the mosaic of community life and by themselves give an adequate picture of neighborhood problems. Physicians have long recognized two important parts to community health. One is medical care, which means all that good physicians, nurses, and hospitals do for us when we are sick. The other is health maintenance, by which is meant all those things we can do for ourselves to avoid sickness. While the physician carries the responsibility in sickness, he also has a part in the maintenance of health. It is a citizenship duty to join with other citizens in improving the neighborhood health standards through education and leadership.

The limits of Regionville, covering the open farm area and the small villages within a radius of 15 to 20 miles, are not too large for efficient coverage with today's transportation. Now we measure distances not in miles but in minutes required to reach medical assistance. The "horse and buggy" doctor required the same amount of time to travel 6 miles to the patient's bedside as is now required to travel 60 miles over good roads and by modern automobile. The patient load per physician has increased accordingly without deterioration in the quality of the attention. In America there is no traditional, hereditary, social stratification such as is seen in many other countries. It is not unusual to see a child born on the wrong side of the tracks become a leading citizen. In a democracy it is impossible to pigeonhole everyone and be sure he will stay put. This makes any hard and fast sociologic conclusions subject to frequent review. The author has divided the people of Regionville into classes based on education, income, business or professional, skilled labor, and employer or employed. He believes that the peculiar class consciousness of each of the classes would in large measure determine their thinking in respect to health needs and medical care. By contrast, to the physician there is only one class of people, and they are those who seek his professional help. Their place in society is not an important consideration in the doctor-patient relationship, but, economically, the physician could divide them into pay and part pay. From the physician's point of view there is no such thing as a "no pay" patient, since pay is measured not necessarily in dollars but in many other values. Some of the physician's warmest friends are the economically distressed people who have only a world of friendship and helpfulness to give in return. One cannot give a true picture of a professional relationship through commercial methods.

In the chapter "Illness in Regionville" the three social classes are studied on the basis of when and how they use medical care. The conclusion was that the members of each class acted in response to certain class taboos, traditions, and promptings. The survey data obtained would seem to lend substance to this conclusion, but this can also be explained in many other ways than by social class reactions; for instance, a more equitable determination would be the I. Q. of the persons interviewed. A person of low I. Q., even in the presence of unlimited wealth, would probably not take intelligent advantage of available help. Social status is not the only important indicator of personal reaction in health matters. It is rather the subject's mental limitation that modifies the benefits from his decisions.

The author is entitled to very special thanks from the medical profession for his understanding tribute to the family physician, who as a general practitioner is the only complete physician capable of diagnosing and treating 85% of all human ills. Everyone should have a family physician, one who knows the patient and his background and who has accepted him as his responsibility. The author has written of "the cost of medical care" as though it meant only the physician's bill. This is a common error. Few people have taken the time to learn that total expenditures for medical care of all sorts were only 4.4% of total consumer expenditures. Of this, physicians received only 1.2%, hospitals 1.1%, and dentists 0.5%. Drugs and sundries accounted for 0.7% and all other medical care 0.9%.

The use of the term "afford to pay" is unfortunate in this relationship. "Willingness to pay" would be better. Nearly all of us have some earnings not entirely used up in living that we spend for things we want. We will pay promptly the installments on the car, television set, or radio. We want these things. By contrast, we do not want illness. We did not order it, and it goes against the grain to pay for it. In Regionville the use of the physician reflected the great change in medical care since the days of the "horse and buggy" doctor. The physicians do nearly all their work in their offices or at the hospital. This is in line with the present day idea of giving the best possible care, which can be done best where the physician has all his facilities for diagnosis and treatment. The patient who insists on being seen in his home gets the least for his medical dollar.

In discussing the use of the hospital the author puts his finger on the most important factor in any community effort. That is the possessive feeling of those who speak of "our hospital," "our schools," and "our church." This was revealed by those interviewed referring to the Regionville hospital as "their hospital" not "ours." Then he concludes "if the hospital is ever to become truly a community hospital, it is apparent that a strong sense of responsibility for their participation in hospital affairs needs to be developed at all levels of the population." This also has been long believed by the medical profession. This same feeling of belonging and of owning comes from earning and is part of the four freedoms. The author's concept of the health team includes all those who in some manner contribute to the treatment of the patient. This means not only the physician but also all those doing the ancillary services such as nursing, technical, and social services. This is all very good in the hospital, but, when this team idea is applied in community activities, we find that this autocratic way of doing things is less satisfactory because it leaves the consumer of medical care out of the act. From the physician's viewpoint the health team includes the receiver as well as the giver of medical care. The physician is the responsible party when we are sick, but the patient has a responsibility in keeping well. The medical profession believes that it is possible to teach people how to protect themselves against the hazards of daily living. To those who complain of medical costs we would point out that the least expensive medical care is that which we do to keep from getting sick.

In this study the emphasis was on the alleged fact that health practices in the community and the health attitudes and behavior of the patient are "subject to change as the social milieu changes." There has been some question of the scientific value of a survey that is pointed in the direction of a previously held opinion. It would be better to conduct a survey to determine what the facts are as a basis for further action. The author is to be commended for an excellent sociologic study. The new technique of frequent interviews over a four year period, planned to elicit factual family experience material while fresh in the memory and uninfluenced by real or imaginary fears, makes the results more worthy of study. Many sociologic studies reflect a paternalistic or guardian attitude. They concern themselves with things that should be done for people. It is more in line with traditional human conduct that assistance should consist of encouraging and stimulating people to solve their own problems in their own way. By this process that sense of belonging, of having possession, of strength, and of confidence in doing, mentioned by the author in relation to the local hospital, could be identified as the community way of doing. The author's comments on the Regionville physicians and their physician-patient relationships are well-meant criticisms. This is a very readable book written in the special language sociologists reserve for their most learned dissertations. It is a valuable contribution to the rapidly growing library of social science literature.

Retropubic Prostatectomy for Benign Enlargement of the Prostate Gland. By Francis A. Beneventi, M.D., F.A.C.S., Attending Urologist, Oswald Swinney Lowsley Foundation, St. Clare's Hospital, New York. Cloth. $11. Pp. 227, with 74 illustrations. Art direction and 44 original drawings by William P. Didusch. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, Canada, 1954.

The title of this monograph is misleading. The author states that he aims to present the subject of retropubic prostatectomy to the student of urology in as simple a manner as possible. He then proceeds to present a series of excellent monographs. One of the most elaborate and detailed discussions ever compiled on the anatomy and vascular supply of the prostate precedes a general discussion on the incidence, etiology, and pathology of benign prostatic enlargement. A most comprehensive discussion on preoperative management of the prostate covers every angle of the subject. The technique of retropubic prostatectomy is presented in a most complete manner and is made especially graphic by the accompanying drawings. Postoperative complications are considered, with an additional monograph on osteitis pubis. The latter subject is considered in great detail. An evaluation of the author's personal experiences with the procedure in 100 consecutive patients is presented. The final chapter is a historical résumé of prostatectomy over the pubis. The bibliography is adequate in each instance. Much of the work on anatomy is original.

Psychoanalysis and the Education of the Child. By Gerald H. J. Pearson, M.D., Dean, Institute of Philadelphia Association for Psychoanalysis. Cloth. $5. Pp. 357. W. W. Norton & Company, Inc., 101 Fifth Ave., New York 3, 1954.

Dr. Pearson says his purpose in writing this book is "the addition of relevant knowledge concerning psychical processes gained through psychoanalytic research to the existing principles of progressive education." In this comprehensive collection of available knowledge, he has fully described the way learning takes place and the reasons that interfere with or distort the process. The book is divided into three sections. The first part, "Psychoanalysis and the Learning Process," is the most interesting and is full of practical wisdom, quotations from people famous in the field of child analysis and education, and profuse clinical examples. The author discusses the comparison of the learning process with alimentation and includes a chart on the biological, psychic, and cultural correlations; the importance of motility to the learning process; the proper balance between stability and stimulation, also pleasure and pain in the development of intellectual capacity; and the importance of affective factors such as the stimulus of ideas associated with the body and the inhibition by guilt. There are many interesting remarks about reading readiness: "I am still not certain whether the phenomenon of reading readiness is really the result of maturation and myelination of cortical association fibers"; "there are 10% of reading difficulties among children in this country"; "reading difficulties are not encountered in Europe except for England." Some of the reading problems may be due to difficulties in learning to read, write, and spell. The role of competitive envy and the relationship to the teacher in the learning process are also discussed.

Parts 2 and 3, "Ego Psychology and the Education of the Child" and "Psychoanalysis and the Development of the Moral Sense," are largely theoretical chapters and merely a repetition of standard ideas of classical psychoanalysis. In the last chapter of the book, "Some Suggestions on the Relationship Between the Psychoanalyst and the Educator," Dr. Pearson makes a strong case for the better selection of teachers and the benefits to the community of psychoanalytic training for them. He advocates selecting certain teachers to be students in psychoanalytic institutes. "There are relatively more teachers than physicians who show an intuitive ability to understand and work with children, and so the practice of psychoanalysis of children would actually benefit by this procedure." "When a teacher had successfully completed such a course, he could return to the school as a reputable consulting psychoanalyst. If after completing his course he should desire to devote himself entirely to psychoanalysis as many pediatricians who have had psychoanalytic training have done, then the institute should demand that he limit his practice to psychoanalysis of children in cases referred by a physician-psychoanalyst and under his supervision." The book also contains many practical suggestions regarding the role of the psychoanalyst in the school and the question of what type of school is suitable for the different types of problems that may be presented.

Diagnostic Advances in Gastrointestinal Roentgenology: Selected Methods, with Clinical Evaluation. By Arthur J. Bendick, M.D., Director of Radiology, Beth Israel Hospital, New York. Cloth. $6. Pp. 131, with 75 illustrations. Grune & Stratton, Inc., 381 Fourth Ave., New York 16; 99 Great Russell St., London, W.C.1, England, 1954.

This monograph deals with certain aspects of x-ray examination of the alimentary tract, notably double-contrast studies of the stomach and colon. In the preface the author emphasizes that the book is not intended for beginners but rather for radiologists and those who have been conducting x-ray examinations of the alimentary tract for several years. Advances in x-ray equipment are briefly described. The technique of mucosal radiography of various portions of the intestinal tract is described. Separate chapters then deal with diseases of the esophagus, stomach, duodenum, small intestine, and colon. There are also chapters on diseases of the gallbladder and pancreas and on x-ray examination of the newborn infant. The illustrations are all in "positive" form, which is to be commended. The differential diagnosis of various conditions is not stressed as much as might be desired, nor are the numerous and confusing anomalies of the alimentary tract given sufficient attention. Indeed, the monograph is more suited for beginners than for experienced radiologists, at least for those who maintain contact with the current literature.

The Mechanism of Labour. By Erik Rydberg, M.D., Professor of Obstetrics and Gynecology, University of Copenhagen, Copenhagen, Denmark. Publication number 181, American Lecture Series, monograph in Bannerstone Division of American Lectures in Gynecology and Obstetrics. Edited by E. C. Hamblen, B.S., M.D., F.A.C.S., Professor of Endocrinology, Associate Professor of Obstetrics and Gynecology, Duke University School of Medicine, Durham, N. C. Cloth. $4.75. Pp. 180, with 38 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto, 2B, Canada, 1954.

By the use of modeled heads and the old Sellheim curved birth canal the author has attempted to show that the shape of the head is the principal reason for internal rotation. He has used motion pictures to show the behavior of the head during external rotation and also the delivery of the shoulders. He reviews the work of Sellheim and of James Young and disagrees with their theories as to the cause of these movements. The text is not too clearly written, probably partly because of language difficulties. Little of value is added to our knowledge of the subject, and, for the use of the average American student, the information in standard textbooks is probably more easily understandable and available. The author uses words loosely referring to "the cranial portion of fetal vertebral column" and says it is "straight or lordotic." Lordosis, as we understand it, is one form of spinal curvature. He spends much time with the study of motion picture strips that are supposed to elucidate the problem of external rotation of the head and concludes with this statement: "Until we are in the possession of more refined methods of investigation and increased knowledge all explanations must necessarily be hypothetical. In this monograph further discussion of these matters must be omitted."

Pulmonary Diseases. Edited by Roscoe L. Pullen, A.B., M.D., F.A.C.P., Professor of Medicine and Dean, University of Missouri School of Medicine, Columbia. Cloth. $15. Pp. 669, with 199 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1955.

Many of the acute and chronic illnesses confronting the clinician are pulmonary, especially if the associated pulmonary manifestations of cardiovascular diseases are included. Mass screening techniques are discovering active disease processes as well as asymptomatic or incipient pulmonary conditions. Although the present classification of pulmonary disease is incomplete, the one adopted in this volume is generally useful. The material in this book, by 20 contributors, is well presented and well illustrated. A list of references is included.

QUERIES AND MINOR NOTES

CORONARY PATIENTS TREATED AT HOME

To the Editor:—*Is there any report on the difference in mortality of patients with acute coronary illness treated at home the first few days over those sent directly to the hospital? Is the danger of embolism considered negligible for the first few days after coronary occlusion, until infarction develops?*

Henry E. Smoak, M.D., Clearwater, Fla.

Answer.—There is no available study that can be considered as a valid comparison of the death rate between patients with acute myocardial infarction who remain at home during the first few days and those who receive hospital care within the first few hours after onset of the attack. Figures of this nature would be difficult to develop statistically because of certain factors that introduce a bias. These would include the tendency for patients with mild cases to be kept at home, whereas in many areas those with more serious illness would be likely to be rushed to the hospital because of the less complete and critical evaluation of the diagnosis at home and the more ready availability of oxygen, anticoagulant therapy (including the early use of heparin), and methods for combating shock and acute heart failure in hospitals. In answer to the second question, the most comprehensive study on this problem is found in the recent report of the committee on anticoagulants of the American Heart Association. A study of thromboembolic complications, by week of illness, reveals that the number of thromboembolic complications per 100 survivors from the previous week that occur in patients not under anticoagulant therapy compared with those in whom anticoagulant therapy is being used were as follows:

1st week: controls 10.2	treated 3.1
2nd week: controls 14.3	treated 4.9
3rd week: controls 9.4	treated 2.3
4th week: controls 6.2	treated 1.0

While this is not a breakdown in terms of the first three or four days, it clearly indicates that an important number of thromboembolic complications do occur during the first week and that these may be strikingly reduced by the use of anticoagulant therapy during that time. The experience of many internists indicates that serious complications may arise in the first few days and, indeed, in some cases they occur before the presence of myocardial infarction is suspected, indicating that infarction may occur silently with the development of a mural thrombus and without recognized symptoms.

OPERATIONS DURING THE MENSTRUAL PERIOD

To the Editor:—*Is the clotting power of the blood disturbed during a menstrual period? Is it sufficiently disturbed to cause a problem in achieving hemostasis during and following operation? Should an elective operation that is scheduled for performance during a menstrual period be postponed to a date following the period?*

M.D., New York.

Answer.—There are no gross changes in the clotting of the blood during normal menses. Studies carried out by Garrott Allen and his co-workers demonstrated a slight reduction of the platelet count and a slight prolongation of the clotting time of statistical significance but of no clinical importance. Menstrual blood clots, but it is promptly lysed by fibrinolysin, resulting in its liquid character. Elective pelvic surgery should not be done during a menstrual period because the vaginal bacterial flora may be altered, favoring pathogenic organisms. Most surgeons and gynecologists prefer not to do elective operations during the menses, for the development of a hematoma or other complication may be related to the period by the patient.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any medical or other organization unless specifically so stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

TETANUS IMMUNIZATION

To the Editor:—*The editorial on tetanus immunization in the Oct. 2, 1954, issue of* The Journal, *page 501, was very enlightening. It covered the field beautifully except for two questions. 1. How long does immunity last after a course of two injections of toxoid? I have heard that Romansky believes that a stimulating dose of tetanus toxoid may be given when indicated even as late as eight or nine years after the course. Is this an accepted belief in the matter? 2. The editorial states that active immunity is a slow process that requires weeks or months. The next sentence is, "In case the patient has not received the last dose of the immunizing series at least one week before injury, an adequate dose of antitoxin is indicated." It seems to me that these statements are contradictory. I have been under the impression that a booster dose of tetanus toxoid is not indicated for at least two months after a series. It is much simpler if a booster dose can be given one week after a series. I am under the impression that a booster dose will take care of a second injury up to 10 days.*

Charles P. Ryland, M.D., Washington, D. C.

Answer.—Because of the individual variability in respect to both duration and level of immunity, the following statements must be interpreted on a statistical rather than an individual basis. The following reports indicate that a subject can respond adequately to a booster dose of tetanus toxoid as late as 10 years following so-called basal immunization with specific toxoid (Looney, J. M., and others: read before the American Association of Immunologists, 37th annual meeting, Chicago, June, 1953; abstracted in *Fed. Proc.* 12:452 [March] 1953. Ipsen, J. Jr.: *New England J. Med.* 251:459 [Sept. 16] 1954. Spaeth, R.: Active Immunization Against Tetanus: Research Relating to Children, Reported January-October, 1952, Bulletin 11, Children's Bureau, U. S. Department of Health, Education, and Welfare, 1953 [information to be secured by direct correspondence with workers reporting]). It is pertinent, as noted by both Ipsen and Spaeth, that booster doses of 0.1 cc. of tetanus toxoid are satisfactory. Although many persons retain the ability to keep the blood titer of antibodies at protective levels for as long as 8 to 10 years after basal immunization, it is equally significant that others lack this characteristic. Therefore, for those habitually exposed to injuries, frequent small booster doses, for example, at intervals of one to two years, seem desirable so that the problem of simultaneous use of antitoxin and toxoid may be circumvented.

The original statement concerning the slow emergence of titrable immunity is valid. However, the question indicates that ambiguity in the use of terms exists. To be specific: a subject receives one dose of alum-precipitated tetanus toxoid, and after several weeks a second dose is administered. If the patient responds adequately immunologically, the rise in titer after the second injection will occur after an interval of 5 to 7 days, although the maximal level will be detected about 28 days after the second injection. Although not stated in the editorial, the possibility of immunologic failure should not be dismissed, at least under the circumstances described, and the use of adjunctive tetanus antitoxin might be considered when there is a specific possibility of occurrence of clinical tetanus from the injury. In other words, a certain calculated risk is assumed when complete reliance is placed on tetanus toxoid under the circumstances described. However, the use of tetanus antitoxin, despite all conventional precautions, constitutes a calculated risk also. In reference to the interval after a series when a booster dose is indicated, there are various practical considerations. 1. The dose required for so-called booster purposes is small, 0.1 cc. subcutaneously, and there is almost no danger with such a procedure. 2. If there has been immunologic failure, this additional injection might evoke adequate immunity. 3. Some persons respond well to booster injections but fail to retain antibodies for long periods. With the 0.1 cc. dose of tetanus toxoid, the problem of booster doses in case of injury becomes more academic than clinical.

INFECTIOUS MONONUCLEOSIS

To the Editor:—*A young lady had infectious mononucleosis in March, 1954. The heterophil antibody with guinea pig absorption was positive in a dilution of 1 to 448. There was no jaundice. Since that time she has had almost monthly recurrences of lymph node enlargement, malaise, and slight fever. She was given tetracycline on two of these occasions with apparent prompt improvement, or at least a lessening of the symptoms. At present, the heterophil test, blood count, sedimentation rate, urinalysis, Brucella agglutination, coccidioidin skin test, and tuberculin patch test are all normal. The histoplasmin skin test is positive. There are no enlarged nodes. Physical examination reveals no abnormalities except that she is 15 lb. (6.8 kg.) underweight. 1. How long may these recurrences persist? 2. What is the longest anyone has ever observed infectious mononucleosis to recur in this manner? 3. Realizing that there is no specific treatment for the disease, have you any suggestions that might prevent or lessen the severity of the recurrences? 4. Although I have felt no significantly enlarged nodes in this patient, could it be possible that histoplasmosis might follow such a low grade and recurrent course?*

E. C. Heyde, M.D., Vancouver, Wash.

Answer.—The question of recurrent attacks of infectious mononucleosis frequently arises when a patient experiences signs and symptoms much as they existed when the diagnosis was originally made. Probably few of these are genuine recurrences. In a published account of five patients alleged to have had recurrent infectious mononucleosis, the heterophil test was done in only two instances at the time of the original attack, and one of these was normal. During the supposed recurrence the heterophil test was done only once, and it was not diagnostic. In other words, the diagnosis was not established in four cases originally and in none at the time of recurrence. This consultant has observed bona fide recurrences in only two patients, one 14 months and one 27 months after the original attack in a group of over 500 cases. A titer of 1:448 on guinea pig–absorbed serum would constitute almost incontrovertible evidence of infectious mononucleosis in the patient under discussion, but no evidence for this diagnosis exists at the present time. The improvement noted with tetracycline suggests that throat cultures and antistreptolysin titers might be informative. The positive histoplasmin test in the presence of negative coccidioidin and tuberculin skin tests cannot be disregarded. A Histoplasma complement-fixation test done during an asymptomatic period and repeated at time of recurrence of symptoms might show a change in titer; however, the low grade systemic symptoms, normal sedimentation rate, and normal physical findings make the likelihood of histoplasmosis quite remote.

PRIMARY AMENORRHEA

To the Editor:—*A girl 17 years of age has had no menstrual periods except one at age 15. She has a slightly increased amount of hair on the upper lip. The breasts are small; she is slender. The introitus is nulliparous. The cervix is definitely small, and the fundus is very small. No masses are palpable in one adnexal area, and the clitoris is hypertrophied.*

M.D., Montana.

Answer.—It is difficult to overcome so-called primary amenorrhea and produce spontaneous cyclic ovulation and menstruation. Bleeding can be induced in amenorrheic girls by giving estrogens alone or progesterone alone, but such bleeding is rarely associated with ovulation. The use of estrogens followed by progesterone is better because, after a few courses of such medication, spontaneous menstrual cycles occur in 25 to 30% of cases. This schedule is satisfactory: (1) 0.05 mg. of ethinyl estradiol orally three times a day for 20 days and (2) 30 to 50 mg. of progesterone orally daily for 10 days beginning on day 14. Hence, ethinyl estradiol alone will be taken from day 1 to day 14, both ethinyl estradiol and progesterone will be taken from day 14 to day 20, and progesterone alone will be taken from day 20 to day 24. Bleeding (if it is to start) will begin a few days after treatment is stopped. This treatment must usually be repeated two or three times, and in some cases a normal menstrual cycle is initiated, although the reason is not clear.

The most logical therapy for absence of ovulation is the use of pituitary preparations that contain the luteinizing hormone. Unfortunately, the commercial preparations are not often effective. Several investigators, however, have had good results with pituitary preparations. Rydberg and Østergaard (*Acta obst. et gynec. scandinav.* **19**:222, 1939) produced both follicular stimulation and corpora lutea in women by means of gonadotrophic hormone preparations. In their cases the ovaries secreted greatly increased amounts of estrogen and progesterone and consequently produced progravid changes in the endometrium and true menstruation. At present the schedule used by Rydberg and Østergaard is as follows: equine gonadotrophin, 1,500 I. U., given daily for five days, or a total of 7,500 I. U.; then chorionic gonadotrophin, 1,500 I. U., given every second day three times, or a total of 4,500 I. U. This therapy is for oligomenorrhea and amenorrhea of short duration in young women. In amenorrhea of long standing and in women past 30 years of age double doses of equine gonadotrophic hormone are used, but the same doses of chorionic gonadotrophin are given. More than 100 women were treated in this way; about 50% had normal menstrual cycles, about 35% had only one bleeding episode after therapy, and 15% had no bleeding. A few women became pregnant. The first menstrual period usually appeared about two weeks after the first injection of chorionic gonadotrophin. For many years Hamblen advocated similar complex treatment and called it "one-two cyclic gonadotrophin therapy." Therapy was begun on the fifth day of the cycle. From this day to the 14th day patients received intramuscularly and daily 400 I. U. of equine gonadotrophin. From the 15th through the 24th day of the cycle, they received intramuscularly and daily 500 I. U. of chorionic gonadotrophin (*Am. J. Obst. & Gynec.* **50**:137 [Aug.] 1945). All pituitary preparations tend to have a high incidence of untoward reactions; hence patients should be skin tested with pituitary preparation before they are used.

If amenorrhea cannot be overcome by time, proper hygiene, diet, hormones, and perhaps some psychotherapy, the last treatment that can be applied is roentgen ray therapy to the pituitary gland alone, the ovaries alone, or to both. After x-ray therapy about 70% of amenorrheic patients will menstruate regularly and about 25 to 30% will become pregnant within a year of the treatment. Roentgen ray treatment must be carried out by a competent roentgenologist. In this patient medical and hormone treatment should be tried for at least two years. Of course, the menses may begin without any therapy even after 17 years of age.

RINGING IN THE EAR

To the Editor:—*A 27-year-old construction worker suffered a fractured skull 1½ years ago. One of his remaining symptoms is constant ringing in the right ear. This symptom has now persisted for such a long time that the young man would rather lose his hearing than to have the constant ringing. Is it advisable to cut the acoustic nerve, or could one destroy the nerve by x-ray or radium? I am convinced that this man's complaints are not on a neurotic base. At present he is receiving B_{12}, nicotinic acid, and serpasil. He was previously examined by two neurologists and one otologist.*

Frank Matthias, M.D., Morrisville, N. Y.

Answer.—Deafness and tinnitus following a fractured skull may be due to actual involvement of the labyrinth in the fracture or, almost as often, to concussion with hemorrhage in the labyrinth. In either event, there is no therapy that can be expected to improve either the hearing or the tinnitus. Surgical section of the eighth nerve is a major procedure, which could be tried in desperate cases but which does not always relieve tinnitus. Surgical destruction of the labyrinth is a much safer and less disabling procedure, which, however, may not relieve, although it would probably diminish, the tinnitus. Tinnitus is an extremely common symptom, and frequently it is the presenting symptom of a patient with an underlying emotional disturbance. It is very helpful to measure the intensity of the tinnitus, which can be done quite easily with an audiometer, and it is often found that what the patient describes as "terrible noises

in his head" actually have an intensity of only 5 or 10 db., which is really a very mild noise. In such cases attention to the underlying emotional disturbance is indicated so that the patient will not center his complaints on the tinnitus but will learn to live with it.

PIGMENT IN THE EYE

To the Editor:—*An ophthalmologist found in a 6-year-old girl a very small black spot (pigment?) exactly in the central area of the left papilla nervi optici. The girl has slight hypermetropia (2 or 3 D.) and no other pathological condition. After birth the mother noted a small, apparently subconjunctival, hemorrhage, absorbed after eight days. The ophthalmologist feels that it could be the first sign of a neoplasm. Please give an opinion about this case.*

D. A. Hachenburg, M.D., Quito, Ecuador.

Answer.—Pigment in this area is never normal and does not arise from the central nervous system. It probably represents some uveal tissue that has been incorporated into the optic nerve. It should be carefully observed and in the event of increase in size the eye should be enucleated.

SILICOSIS

To the Editor:—*As chairman of the Occupational Disease Board of the State of Maryland, I have been presented with a case of silicosis where the claimant died and autopsy findings revealed microscopic evidence of silicosis but not sufficient silica from chemical analysis to indicate that the patient at the time of his death had silicosis. Is there a physiological reaction that takes place over a period of years that would tend to eliminate the silica from the body? I have been presented with a case showing definite microscopic nodules that are almost typically characteristic of silicosis. This patient had not been exposed to silica for years prior to his death, and the chemical analysis for silica was within the limits that are known to be normal.* *James Frenkil, M.D., Baltimore.*

Answer.—There is some evidence that many adults never exposed to silica in industry and some never employed in industry, including some housewives, will at autopsy or biopsy reveal small numbers of characteristic silica nodules in pulmonary tissues. Theoretically, these persons have silicosis, but as to significance and disability such finding is without importance. This means that the mere disclosure of typical silica nodules by microscopic examination in or out of industry affords no valid basis for the diagnostic conclusion that significant silicosis exists or existed during life. The demonstration of large numbers of microscopic nodules adds to the importance of the situation. Likewise, the exhibition at autopsy of numerous characteristic macroscopic nodules adds to the opportunity for rightful conclusions. During life the determination by x-ray examination of characteristic silica nodules in itself furnishes no measure of disability, although evidence of accompanying infection contributes significantly to the matter. It follows that numerous workers with diagnosable silicosis are not measurably impaired as to work capacities, and at death it should not always be concluded that the existing mild and simple silicosis entered into the cause of death. Within reason and with exceptions simple silicosis is a quantitative disease, and mere qualitative silicosis may be of negligible clinical import. It may be true that, if all persons attained the life span of 150 years, then qualitative silicosis truly might come to be universal. Silica is soluble only in slight degree. Trace amounts in solution may be removed from the lungs and, at the same time, millions of undissolved particles. Yet it is to be distinctly observed that the finding in the present instance of a low content of silica in the lung ash does not mean that over the years there has occurred a draining away of large quantities of silica, thus making plausible any belief that at some prior time silica was present at much higher levels. Lung ash levels of silica constitute no conclusive test as to fatal silicosis; important as they may be, they provide no finality. During life, disability from silicosis is determinable only with difficulty but can be achieved through appropriate functional tests. Decision in the present case should be influenced by the following considerations, as data are available: (1) the severity and duration of the exposure to silica whenever it took place; (2) the clinical evidence of disability as attributable to pulmonary impairment; (3) the causes of death as apart from possible silicosis; (4) indications of coexisting infection and the severity thereof; (5) the revealments of x-ray films made during life, properly made and properly examined; (6) gross lung findings at autopsy, together with chemical and microscopic tissue examinations. No decision should be predicated on the sole finding of a few characteristic silica nodules in lung tissue after autopsy.

WETTING AGENTS IN ANTIBIOTIC MISTS

To the Editor:—*There have been many articles on the use of mist-containing deterg. nts and antibiotics in upper respiratory infections. Alevaire, Aephiran, Triton A 20, and Duponal C have been recommended as wetting agents. Is there danger of unwanted reactions from any of these wetting agents? Does the age of the child make a difference?* *M.D., Iowa.*

Answer.—There are no known reactions to Duponal following its inhalation in mists. Triton is the main ingredient of Alevaire and has a pH of about 10; inhalation of this material may produce very severe irritation of the bronchial tree. Alevaire, when used in small quantities, has very little clinical effect and produces no untoward reactions. If a striking effect is to be produced, it has been suggested that about 50 ml. should be inhaled. The danger of treatment with these compounds results from the effect that they have in allowing the liquefaction of thickened secretions, which, if large enough in quantity, may result in the patient drowning in his own secretions unless great care is taken to aspirate as thoroughly as possible the excess of fluid from the bronchial tree. Reactions to mixtures of antibiotics and wetting agents may be due to inhalation of the antibacterial drug. Asthma, anaphylactoid reactions, skin eruptions of various types, and superinfections of the lung have been described following repeated inhalation of penicillin or streptomycin. These are not any more prone to develop in children than in adults. It has been suggested that the individuals who develop severe reactions of hypersensitivity to antibiotic agents are those who have an allergic background, especially a history of atopic allergy.

CONTAMINATION OF OPERATING ROOMS

To the Editor:—*As chairman of the operating room committee of the Lincoln General Hospital, I am trying to get all necessary information to determine what is a contaminated case and what is not. In addition to deciding which cases are contaminating and which are not, please advise as to the necessity of closing an operating room that may have been contaminated and the duration of closure, particularly for commonly met infections (abscesses, ruptured appendixes, etc.) and for more virulent contaminations, such as gas-forming organisms.* *Frank Cole, M.D., Lincoln, Neb.*

Answer.—Every case where pus or gangrene is encountered, open injuries, and operations on the intestinal tract or perineum are potentially contaminated, and the linen and instruments must be disposed of by a technique that achieves terminal sterilization. Air-borne contamination is the important vector in the operating room, and the floor is the great reservoir for dangerous organisms. Blood or pus containing bacteria becomes airborne after it has dried and is scuffed into the air. A floor covered with recently spilled blood or pus contributes little to air-borne contamination. Mopping often disseminates this material and facilitates the formation of a thin film containing organisms that is easily dispersed in the air. Contaminated mops and pails are reservoirs of sepsis. A freshly laundered mop-head should be used daily. A flushing rim service sink replaces the pail. With proper technique, operating rooms need not be quarantined. Clean and contaminated cases can be scheduled indiscriminately with impunity. One suitable technique is described in chapter 15 of Carl W. Walter's "The Aseptic Treatment of Wounds" (New York, the Macmillan Company, 1948).

HEADACHES FOLLOWING ENCEPHALITIS

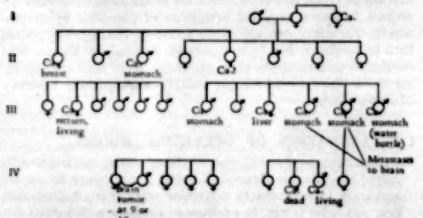
To the Editor:—*A man, aged 57, in 1954 had an attack of the flu that soon developed into severe pain in the right leg followed by paralysis, the right arm being involved to a lesser degree. Pain, stiffness, and rigidity occurred in the neck. Poliomyelitis was suspected but was disproved by spinal tap. A diagnosis of encephalomyeloradiculitis (Guillain-Barré syndrome) was made. All motor function returned, and mild sensory disturbances have cleared up except for frontal headache, which is described as a rolling ache above the eyes, usually always present, but quite severe toward the end of the day. Physical exertion does not affect the headache. The patient has been working since Dec. 13, 1954, cutting meat. The patient never had much of an appetite before his illness, but now he eats three good meals a day. During the acute stage of his illness he was given daily injections of vitamin B_{12}, plus analgesics and supportive treatments. Cafergot, Edrisal, Dramamine, and thiamine have been tried without effect. Corticotropin (ACTH) and testosterone were cautiously tried without benefit. I believe the headaches will eventually disappear, but wonder if there is any further effective treatment.*

M.D., Oregon.

Answer.—The cause of headaches following encephalitis is not known, but they tend to disappear with time, and the treatment outlined by the physician seems quite correct.

IS CANCER HEREDITARY?

To the Editor:—*On page 560 of the Feb. 5 issue of* The Journal *under Queries and Minor Notes a physician from Massachusetts asks about the familial tendency of cancer. I do not wish to argue the point either way, but readers of* The Journal *might be interested in a family here that I have observed for many years. Five out of six siblings have died, and a double first cousin is about to die of gastrointestinal malignant disease. Enclosed is a rather crude chart of this*



family, which may illustrate the incidence better. The living members of the third generation are now in their 70's. Most of these patients have been under my personal observation and the diagnoses verified by surgery or postmortem examination. Information regarding the cases in generations I, II, and IV has been gathered from surviving relatives.

L. A. Miller, M.D.
North English, Iowa.

OFFSPRING OF RADIOLOGISTS

To the Editor:—*I note the answer concerning the "Offspring of Radiologists" in the March 5 issue of* The Journal, *page 874, in which reference is made to my study on the occurrence of congenital malformations in the families of radiologists and other physicians. Since frequent inquiries on this subject have appeared in recent columns of Queries and Minor Notes, I thought you might like to know that our complete paper on "National Survey of Congenital Malformations Resulting from Exposure to Roentgen Radiation" has just appeared* (Am. J. Roentgenol. 73:442-466 [March] 1955). *Dr. Philip S. Lawrence is co-author, and he was co-exhibitor when we presented and exhibited our work at the meeting of the American Roentgen Ray Society in Washington.*

Stanley H. Macht, M.D.
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Hagerstown, Md.

CAUSALGIA AFTER A STROKE

To the Editor:—*In* The Journal *of Nov. 27, 1954, page 1296, the answer to Dr. Russell B. Engle's question concerning causalgia following a minor cerebral hemorrhage mentions nothing about the use of sympathetic ganglion block or about any of the medicaments used for medical sympathetic ganglion block, which, in the particular problem described by Dr. Engle, would seem to be of much more symptomatic value than the program outlined. The relief of causalgia-like pain, even in cerebral accidents such as described, by attacking it through the sympathetic nervous system, has been well documented, particularly by Dr. J. C. White of Boston.*

J. Arthur MacLean, M.D.
New York University
Bellevue Medical Center
New York.

To the Editor:—*With reference to the reply to the letter of Dr. Russell B. Engle, in* The Journal, *Nov. 27, 1954, page 1296, I have had some success in treating causalgias, including posthemiplegic, with prolonged sympathetic blocks. Periodic repeat blocks with one of the new long-acting agents can be performed in the home. If a capable nurse is in attendance a fine polythene tubing can be inserted and repeated injections made with 0.5 or 1.0% novocaine. If ipsolateral blocks are inadequate then blocks should be done on the opposite side. Improved circulation and relief of pain permit more joint movement and promote cooperation in active rehabilitation.*

Albert Fields, M.D.
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PROPOSED THEORY FOR INVESTIGATION OF CANKER SORES

To the Editor:—*On page 301 of* The Journal, *Jan. 15, 1955, a proposed theory for the investigation of oral canker sores is mentioned. Although I have never reported my own treatment, I have used it with unusually good success for the past three years on myself, members of my own immediate family, and patients in my practice who have presented this condition. The treatment is simple. I used 8 mg. of Chlor-Trimeton four times a day for three days. Results are usually noted within 24 to 28 hours. Treatment is then continued for another 24 hours after disappearance of the canker sores to prevent a possible recurrence. A response to an antihistaminic seems to suggest a possible sensitivity factor in the origin of aphthous stomatitis.*

Joseph Glasser, M.D.
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NEW DISEASES

To the Editor:—*In Queries and Minor Notes, Feb. 5, 1955, page 558, two consultants replied to the question "Do you have any information regarding the appearance of absolutely new diseases since 1900?" Neither consultant mentioned infantile cortical hyperostosis, the first description of which appeared in 1930 (Roske, G.: Monatschr. f. Kinderh. 47:385, 1930) and which was first named as a new syndrome in 1945* (Am. J. Roentgenol. 54:1, 1945). *In this disease there are conspicuous clinical and radiographic signs readily recognizable, and it is highly unlikely that it would have been missed or confused with other diseases had it existed prior to 1930. There are no records of such an unrecognized disease in the clinical or radiological files of several large hospitals where the subject has been investigated. Although the causal agent is still unknown, the clinical picture and the radiographic findings indicate that infantile cortical hyperostosis is a new morbid entity that appeared first during the early 1930's.*

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SUBJECT INDEX

The letters used to explain in which department the matter indexed appears are as follows: "E," Editorial; "C," Correspondence; "ab," abstracts; the asterisk (*) indicates an original article in THE JOURNAL.

This is a subject index and one should, therefore, look for the subject word with the following exceptions: Foundations, Lectures, Moving Pictures, and Prizes, under "F," "L," "M," and "P" respectively. "Book Notices," "Deaths," "Medicolegal Abstracts" and "Societies" are indexed under these titles at the end of the letters "B," "D," "M," and "S." Matter pertaining to the Association is indexed under "American Medical Association." The name of the author, in brackets, follows the subject entry.

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Acad.—Academy *Indust.—Industrial*
Am.—American *Inst.—Institute*
A.—Association *Int.—International*
Coll.—College *M.—Medical*
Commn.—Commission *Med.—Medicine*
Comm.—Committee *Nat.—National*
Conf.—Conference *Pharm.—Pharmaceutical*
Cong.—Congress *Phys.—Physicians*
Dist.—District *Soc.—Society*
Div.—Division *Surg.—Surgery*
Found.—Foundation *Surgs.—Surgeons*
Hosp.—Hospital *S.—Surgical*

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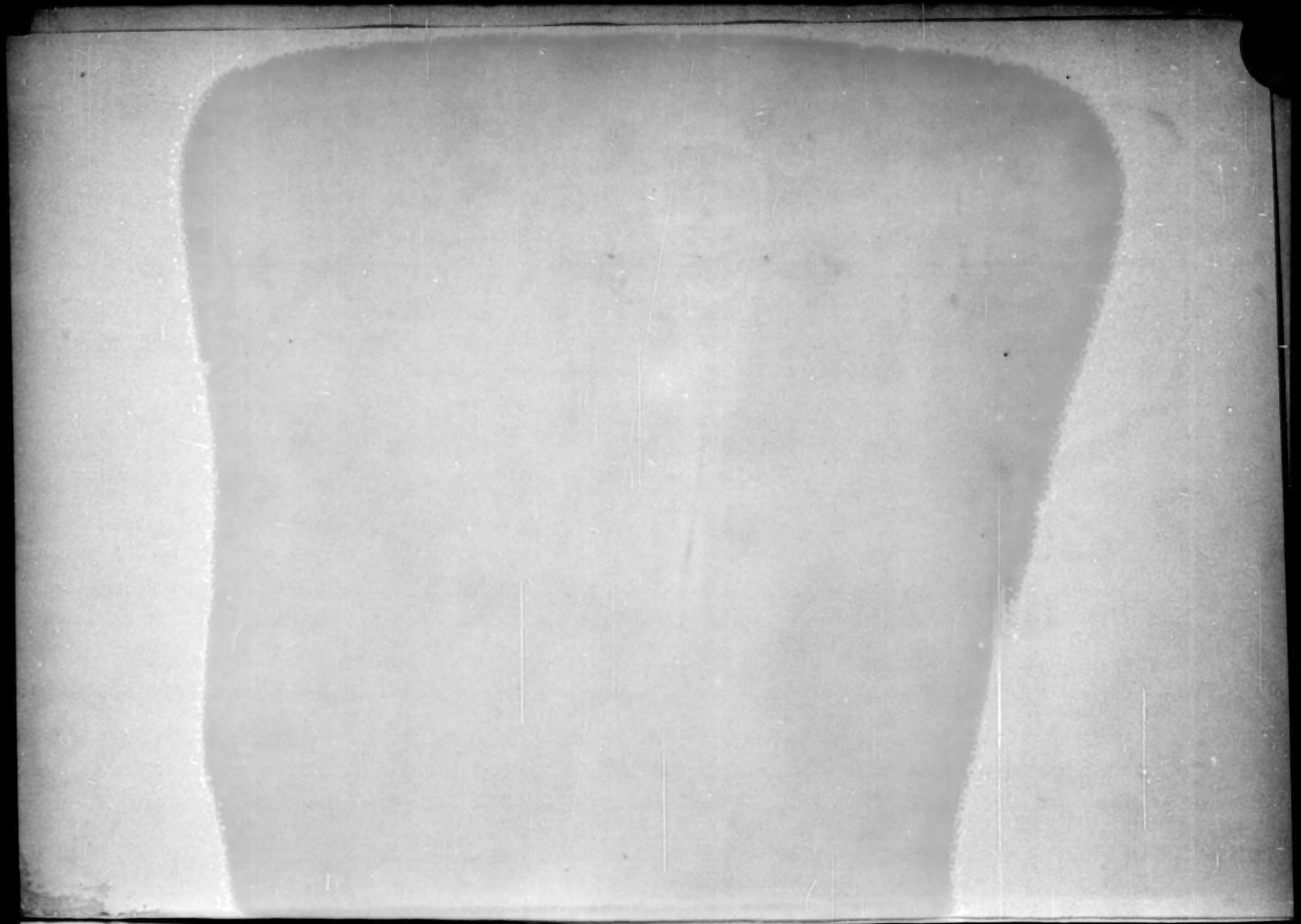
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